mSanté- Mobile Health for Communities

Mobile Applications developed for Agents de Santé Communautaires Polyvalents (ASCP), Health Facility Referrals and ASCP Supervisors in Haiti

Comprehensive Report and Documentation

January 19, 2016

Innovated, Designed, Pilot Tested and Refined by the USAID funded Services de Santé de Qualité pour Haïti - Central South (SSQH-CS) Project

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Background

Under the leadership of the Ministère de la Santé Publique et de la Population (MSPP), Haiti is striving to strengthen community level health services to generate demand and deliver health services at the household level and connect these services to health facilities. In order to do so, MSPP has introduced a new cadre of community health agents, agents de santé communautaires polyvalents (ASCP). ASCPs are expected to provide integrated community level primary health care and referrals. ASCPs can benefit from tools that support them to conduct household visits and counseling, and documentation and reporting. The Services de Santé de Qualité pour Haïti (SSQH) Central and South mHealth Project, was launched in Sept 2013 and explored the innovative use of mobile applications to strengthen the quality of ASCP services and facilitate referrals and counter referrals with health facilities. The SSQH-CS project chose the CommCare platform for its advanced functionality and international evidence as a feasible and acceptable mobile platform for frontline health workers to conduct counseling, provide and document client level service delivery and report aggregate health indicators.

Overview of CommCare

Dimagi's open source, core platform, CommCare, is the most widely used, evidence-based platform for CHWs and has been evaluated by numerous top-tier research firms, NGOs, and academic institutions, including Pathfinder International. Please see publication on Nigeria MNCH application implemented by Pathfinder Nigeria published in the Plos One Academic Journal here.[i]

CommCare is open-source and turnkey, allowing users to build mobile applications without requiring a developer. CommCare can be hosted on MSPP's own servers, or can be hosted in the cloud by Dimagi. CommCare is fully supported by Dimagi and continually updated with new functionality and features. CommCare supports longitudinal case management of clients, including ASCPs that are low-literate users. CommCare can run offline in low-connectivity areas and ASCPs can send the data and forms to the server when they reach a network area for coverage.

Using the content algorithms built on the MSSP training package by SSQH-CS team, Pathfinder PIH/ZL and Dimagi, ASCPs use the CommCare platform to register clients, and receive real-time job support through multimedia, decision support, and referral algorithms. Data from CommCare apps is collected in real-time to a secure server where program staffs can easily access reports on beneficiaries, CHW, or programmatic indicators.

Dimagi's innovative approach to designing and implementing CommCare is due to unique properties that differentiate CommCare from other mobile systems. CommCare uniquely allows organizations to design and build their own complex apps for frontline workers without programming or requiring a developer. It is also the most evidence-based supported mHealth platform for low-resource settings, and has demonstrated impact on improving community health service quality and outcomes for maternal, newborn, and child health (MNCH). Over 30 studies demonstrate that CommCare amplifies CHWs' impact through improved service delivery and quality found here.[ii]

Overview of mSanté

In January 2014, SSQH-CS launched mSanté, a suite of mobile applications and reporting tools designed to strengthen quality of the national ASCP program. The goals of mSanté are:

- Develop and implement an openly available suite of mobile applications and reports designed to strengthen the integration and quality of ASCP services through decision support and data collection functions for HIV, Maternal Health, Child Health and Family Planning
- Improve the community and facility referral and counter referral systems and documentation on referrals
- Strengthen supervisors ability to carry out mentoring to improve ASCP performance

mSantéTools and Reports developed to date:

- ASCP Integrated Service Delivery mobile job aid
- ASCP supervisors mobile job aid
- Facility Referral and counter referral job aid
- Program reports for key stakeholders to view ASCP performance data for decision making and quality improvement
- Community level data reports on the mobile app to feed into national HMIS data systems

SSQH-CS reviewed all national guidelines, ASCP training packages, HMIS indicators for community reporting and built mobile decision support algorithms and reports for mSanté. All mobile applications were built using the CommCare platform, supported by Dimagi. Pathfinder and Partners in Health/Zanmi Lasante (PIH/ZL) contributed the technical content, algorithms and design of the application and tools.

An extensive process for developing the applications was employed. using user centered design principles and international best practices for CHW app building, 5 months of fieldwork and design created a final iteration of the applications that were co-designed with the end user and matches the workflow and daily responsibilities of an ASCP.

mSanté ASCP Application Overview

The ASCP application allows them to register clients during household visits and provide HIV, family planning, maternal health and child health services. During an ASCP household visit, the mSanté application prompts capturing key health information about the client. If any danger sign or risk factor is identified during the client visit, the application triggers a client referral to the health facility. The ASCP application keeps a record of all clients and triggers prioritized reminders if the client is found to be high risk or in need of closer follow up. When a client is referred, the client case is assigned to a facility user with the necessary key information to complete a referral is transferred to the facility application where the nurse can see client history and update the case, confirming referral in mSanté. This confirmation of referral, with client follow up notes, is transferred via the application back to the ASCP, closing the referral loop.

Supervisors also have an application that allows them to view the ASCP performance and conducting mentoring visits.

Table 1: Key Functions of the mSanté ASCP application

Child Health	Pregnancy	Family Planning	HIV
Malnutrition	Registration	Enrollment	Holistic pt info
Vaccination Tracking	ANC Visits TT Vaccine	Referral for long acting methods	LTFU Tracking
Vitamin A	Folic Acid/Vit A	FP refills	Adherence
Deworming	HIVSTI screening	HIV/STI screening	HIV/STI Screening
Diarrhea	Birth Planning		TB Screening
TB	Birth Details for mom and baby	Focus on youth counseling	PMTCT including EID
Other symptoms and referral	Risk Factor identification and referral		Other Illnesses identification and referral
Counseling	Counseling	Counseling	Counseling

mSanté Supervisor Application Overview

This module supports the ASCP supervisor to monitor ASCP performance in providing home level services and using mSanté. In some cases at sites, the ASCP supervisor can be an ASCP themselves, or be a community nurse. You can “turn on” the supervision module in the ASCP application if the former is correct, or just show the supervisor form (and not the other ASCP content) if they are not an ASCP in addition to their supervisor status.

The mSanté Supervisor form covers the following information:

- There is an inbuilt reporting form that will display each of the ASCP monthly performance according to the HMIS indicators and other programmatic indicators that might help the supervisor to effectively provide support to improve the quality of the

ASCP services. The following indicators are calculated for each CHW monthly and display directly within the application for ease of use:

- Assess ASCP mSanté application usage: this asks several questions about how the ASCP is using mSanté and any challenges
- The form allows the supervisor to conduct key mentoring advice for the ASCP (using the ASCP performance data to drive the meeting. Then it allows the Supervisor to document any recommendations or corrective action the ASCP should complete in the next month. Then during the next monthly meetings, the recommendations will appear to continually understand and update any recommendations if performance improved, and document any new performance recommendations made for the ASCP that month.

mSanté Facility Application Overview

The facility application in mSanté serves the function to allow facility clinical staff to see a summary of a referred client's case record directly on their CommCare application. When a client shows up at the facility for services based on the referral, the supervisor can confirm the client attended and type in key follow up information for the ASCP to support the client after the facility visit.

mSanté Reports overview

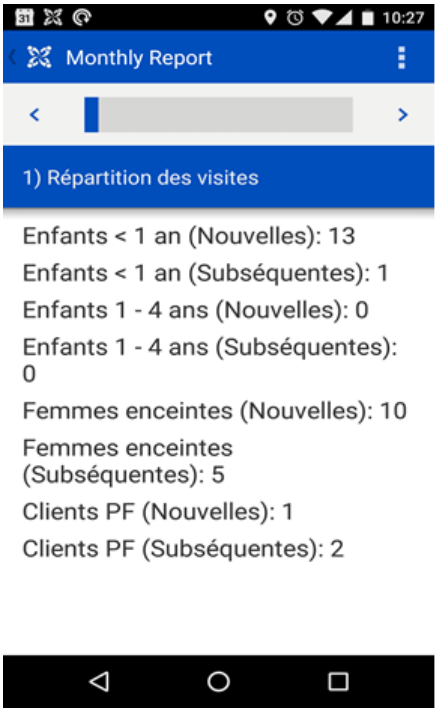
The mSanté system was designed to help the ASCP have higher quality performance during household community visits in addition to collecting key community indicators that could support the national HMIS. Please see the supporting document “mSanté Applications Outline” dated October 15, 2015, which describes the functionality of the application. This document can be found in the Annex to this report. Additionally, SSQH-CS developed HMIS reports that can be used to feed data into SISNU. This document called “mSanté ASCP HMIS Indicators” Dated October 16, 2015 can also be found in the Annex to this final report.

SSQH-CS has built a number of reports that are available not only to help feed into the national SISNU but also supporting routine supervision and management of ASCPs. The full list of reports can be found in the annex to this document called “mSanté Data Use Plan”. This document also provides some suggestions about the method of delivery of these reports and some key stakeholders that would benefit from the different types of reports that come out of mSanté.

Any report in CommCareHQ can be configured for any level of data access and privacy (aggregated and not patient level information or records), frequency and site or NGO or ZC or Department level. There are reports that help the facility or supervisor better manage the ASCP performance as well as HMIS reports that align with the community level indicators that MSPP requires. HMIS reports are also available to the ASCP directly on the mobile application and Supervisors can see all aggregate ASCP reports for the whole facility to help them report aggregate community indicators to the data clerk to input into SISNU. mSanté reports can be grouped by ASCP, Facility or NGO/ZC and can be filtered by any date range. The full list of reports that were built for mSanté is found in the “mSanté Data Use Plan” in the annex to this document. Below is a screenshot of how the ASCP can see their HMIS indicators on the

mSanté application directly. Following that is a screenshot of the list of reports that were developed for mSanté directly from CommCareHQ.

Figure 1: ASCP Mobile HMIS Reports



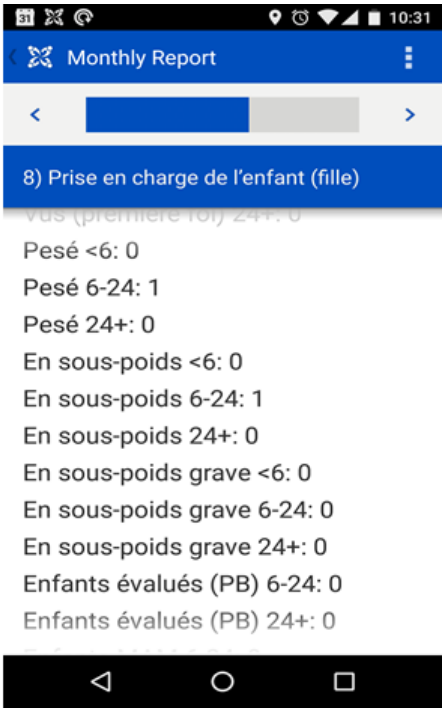
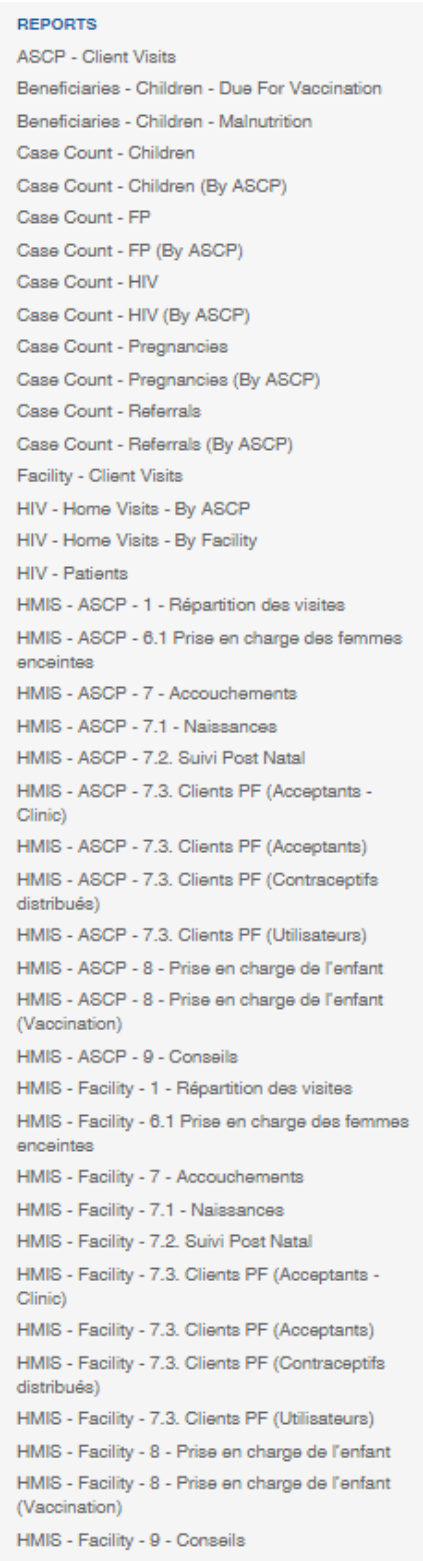


Figure 2: Screenshot of all reports developed for mSanté



Status of mSanté as of January 2016

The development of mSanté began in September 2013 when SSQH-CS was launched. At the start of the project, SSQH-CS mapped the ASCP curriculum and pulled out the key roles and tasks of the ASCP to build out the mSanté applications. At the start, SSQH-CS built out the maternal health and family planning aspects of the application. In July 2014 a child health module was developed and added to the ASCP application. In July 2015 a HIV module was developed and added to mSanté.

Sites and ASCPs trained to date

The table below describes the numbers of ASCPs, facilities and supervisors that have been trained in mSanté:

Table 2: Health Workers trained in mSanté from April 2014 - September 2015

	ASCP Formés par CDS	ASCP formés dans mSanté	Utilisateurs actifs de mSanté	Total
ASCP	904	475 (57 HIV)	285 (74%)	**475**
Superviseurs et staff ONG	TBD	133	65 (60%)	**133**
Formation réalisée après mise a jour mSanté	N/A	285	N/A	**285**
Training of Trainers	TBD	20		**20**

Below is a table of the sites that were trained to use mSanté and the numbers of providers trained by site to use mSanté.

Table 3: List of SSQH-CS sites trained in mSanté

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
AEADMA	CAL Dame Marie *CE-C	CAL	Grand Anse	20	0	7
HHF	CSL Klinik Pèp Bondye	CSL	Grand Anse	25	0	7
HHF	CSL Klinik St Joseph	CSL	Grand Anse	25	0	6
L.Coicou	CSL Léon Coicou	CSL	Grand Anse		6	3
Ste Hélène	CSL Ste Hélène	CSL	Grand Anse	24	24	3
MEBSH		Dispensaire			26	12
CDS Ouest	CSL Petite Place Cazeau #	CSL	Ouest		7	2
Fermathe	Hôp.de Fermathe #	HCR	Ouest		26	17
Filles Charité	CSL CNSRR	CSL	Ouest		0	0
FONDEFH	CAL Bizoton	CAL	Ouest		93	17
FOSREF	CSL Christ-Roi	CSL	Ouest		31	0

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
ICC Grace	Hôp. ICC Grace	HCR	Ouest		23	5
ICC Grace	Hôp. ICC Grace	HIV Field Agents	Ouest	8	7	
L.Bontemps	CSL Lucélia Bontemps	CSL	Ouest		0	1
OBCG	CSL OBCG	CSL	Ouest		24	4
OBDC	CSL Grenier (Laboule 12)	CSL	Ouest		20	5
SADA	CAL Matheux	CAL	Ouest		0	
SADA	Disp.Fonds Baptiste	Dispensaire	Ouest		0	
SADA	Disp.Source Matelas	Dispensaire	Ouest		0	
SADA	CSL Bellanger	CSL	Ouest		0	
St Paul	CAL St Paul	CAL	Ouest		0	
MEDISHARE	CSL Marmont	CSL	Plateau Central	28	0	
MEDISHARE	CSL Casse (Lahoye)	CSL	Plateau Central		0	

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
La Fanmy	CSL Cl. La Fanmy	CSL	Sud		4	2
Sacré Coeur	CAL Sacré Coeur	CAL	Sud-Est	yes	0	
Abricots	CSL Abricots (St Joseph)	CSL	Grand Anse		18	3
Abricots	Abricots (Leon Coicou)	CSL	Grand Anse		6	3
Corail	CAL Corail	CAL	Grand Anse	Yes		
Anse A Veau	CAL Jules Fleury	CAL	Nippes		0	
Anse A Veau	Disp. Arnaud	Dispensaire	Nippes		0	
Anse A Veau	Disp. St Yves	Dispensaire	Nippes		0	
L'Azile	CAL L'Azile	CAL	Nippes		0	
L'Azile	Disp. Changieux	Dispensaire	Nippes		0	
L'Azile	Disp. Morisseau	Dispensaire	Nippes		0	

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
Petit Trou	CAL Petit Trou	CAL	Nippes		0	
Petit Trou	Disp. Grand Boucan	Dispensaire	Nippes		0	
Bel Air	CSL Bel Air	CSL	Ouest		18	3
Cornillon	CAL Cornillon	CAL	Ouest		0	
St Martin	CSL St Martin	CSL	Ouest		35	5
Tayfer	Disp.Tayfer	CSL	Ouest		23	4
Casale	CSL Casale	CSL	Ouest	Yes	0	
Belladère	Hôp. de Belladère	HCR	Plateau Central		0	
Belladère	Disp.Baptiste	Dispensaire	Plateau Central		0	
Belladère	Disp. Roy Sec	Dispensaire	Plateau Central		0	
Cerca la Source	CAL Cerca La Source	CAL	Plateau Central		0	
Cerca la Source	CAL Tilory	CAL	Plateau Central		0	

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
Maissade	CSL Bourg de Maïssade	CSL	Plateau Central	40	0	
Maissade	Disp.Ossenande	Dispensaire	Plateau Central		0	
Maissade	Disp.Cinquième	Dispensaire	Plateau Central		0	0
Maissade	Disp.Selpêtre	Dispensaire	Plateau Central		0	0
Savanette	CSL Savanette #	CSL	Plateau Central	Yes	0	
Savanette	Disp. Colombier	Dispensaire	Plateau Central	Yes	0	0
Ile à Vache	CAL de Ile à Vache	CAL	Sud		11	3
Les Anglais	CAL de Les Anglais #	CAL	Sud		21	3
Bainet	CAL de Bainet #	CAL	Sud-Est	Yes	0	
Bainet	Disp. de Saurel	Dispensaire	Sud-Est	Yes	0	
Bainet	Disp. de Bahot	Dispensai	Sud-Est	Yes	0	

ONG/ZC	Site/PPS	Type of Site	Department	Planned for Year 3	Total ASCP trained (Year 1 and 2)	CHW Supervisors trained
		re				
Bainet	Disp.de Chomeille	Dispensaire	Sud-Est	Yes	0	
Bainet	Disp.Brézilienne	Dispensaire	Sud-Est	Yes	0	
Bainet	Disp.Bras de gauche	Dispensaire	Sud-Est	Yes	0	
Bainet	Disp. Oranger	Dispensaire	Sud-Est	Yes	0	
Belles Fontaines	Belle Fontaines* (Act. Comm.)	Community	Ouest	Yes	0	
*Trou d'Eau/Crochu	Trou d'Eau/Crochu* (Act. Comm.)	Community	Ouest	Yes	0	

Pending and Requested mSanté Changes

From August until December 2015, SSQH-CS reviewed the performance of the pilot, the mSanté applications workflows and changes that needed to be made to mSanté. These are changes suggested for any group who would like to continue to use mSanté. These changes were identified through discussions with MSPP, ASCPs using mSanté, USAID requests and through SSQH-CS partner interviews.

Table 4: USAID, MSPP and Partners Requested Changes

Requested Item	Estimated Time
Update to Application to Support a Household Census Feature	1 week development and testing in country 3 weeks remote development 1.5 week training and collateral updates
HIV PMTCT & EID Module	2 Weeks Development In Country 2 Weeks Remote Development Time 1 Week Training and Collateral Updates
Update Referral Module to Match New MSPP Format	1 week development and testing in country 2 weeks remote development 0.5 week training and collateral updates
Updates to the Rally Post Module & Support for Mobile Clinics	2 weeks development in country 2 weeks remote development 1 week training and collateral updates
Updates to the Supervision Module to Match New CDS Supervision Guidelines	1 week development in country 1-2 weeks remote development 0.5 week training and collateral updates
Add Client Visit Surveys to Application (for clients	1 week in country

post visiting a facility)	1 week remote development 0.5 week training and collateral updates
General Purpose TB Screening and Referral Module	1 week development in country 2 weeks remote development time 0.5 week training and collateral updates
Design the Integration with iSante	1-2 weeks

CommCare and DHIS2 Demonstrated Interoperability

CommCare and DHIS2 play complementary roles in a country's health system. The CommCare application focuses on service delivery (tracking and prioritizing clients, service delivery check lists, and audio counseling messages). CommCare can function fully offline and has been developed for over 5 years with CHWs to meet their needs. It has demonstrated impact on improving community health service quality and outcomes for maternal, newborn, and child health (MNCH). It has been shown to improve quality of care, experience of care, accountability of services and clients' knowledge, attitudes and practice. DHIS2 typically tracks aggregate health indicators from facilities and does not support the complex workflows that CommCare does for frontline service delivery.

CommCare can integrate with DHIS2, sending individual or aggregate community data into DHIS2. This integration is live in Benin for vaccinations, in Senegal for stock data and in Burkina Faso for IMCI. This integration is fully user configurable - as DHIS2 and CommCare change over time; no developers are required to maintain the integration.

SSQH-CS mSanté Deployment Model

Prior to training a new site, Zone Ciblee or NGO on mSanté, SSQH-CS prepared a site preparation checklist and mSanté orientation presentation for the site level leadership. These materials can be found in the annex to this document. Once a site is oriented, then ASCP, supervisors and facility staff are trained in-person at the facility on how to use mSanté.

SSQH-CS developed a 5 day training package for ASCPs to be trained to use mSanté. During trainings, supervisors and other facility staff (managers, leadership, M&E staff, and data clerks) were also invited to attend the training. The trainings were conducted in a group setting with 1-2 trainers from SSQH-CS and Dimagi. The mSanté ASCP supervisors also attend the ASCP 5 day training and get an additional 2 days training for the Supervisor application specifically. All

training materials, power points and supporting materials can be found in the annex to this document.

Once the ASCPs have been trained, one of three mHealth Advisors from SSQH-CS follows a site to support any troubleshooting or other problems that the ASCP or the Supervisor or facility faced in using mSanté. Reports were developed in CommCareHQ to show the active usage of each ASCP, the version of the application deployed and data on usage. This can help mHealth advisors and facility staff to monitor individual provider usage.

Costing and Business Models for mSanté Adoption and Scale

SSQH-CS designed mSanté from the beginning of the project to be able to go to national scale. Globally, there is no mHealth project that is as integrated or comprehensive implementing the supervision and referral system. At a global level, there are few CommCare projects that have been scaled up nationally, however several countries that have committed to scaling community health worker (CHW) CommCare applications. Despite the new nature of many CHW mHealth projects now going to scale, several global mHealth experts and organization have published guidance on costing and business models for scale. This section describes the work that SSQH-CS completed in year 2 regarding planning for scale to ensure all key aspects of program management and operations are in place to manage mSanté at national scale in Haiti.

Haiti mHealth Assessment and Planning Tool (MAPS)

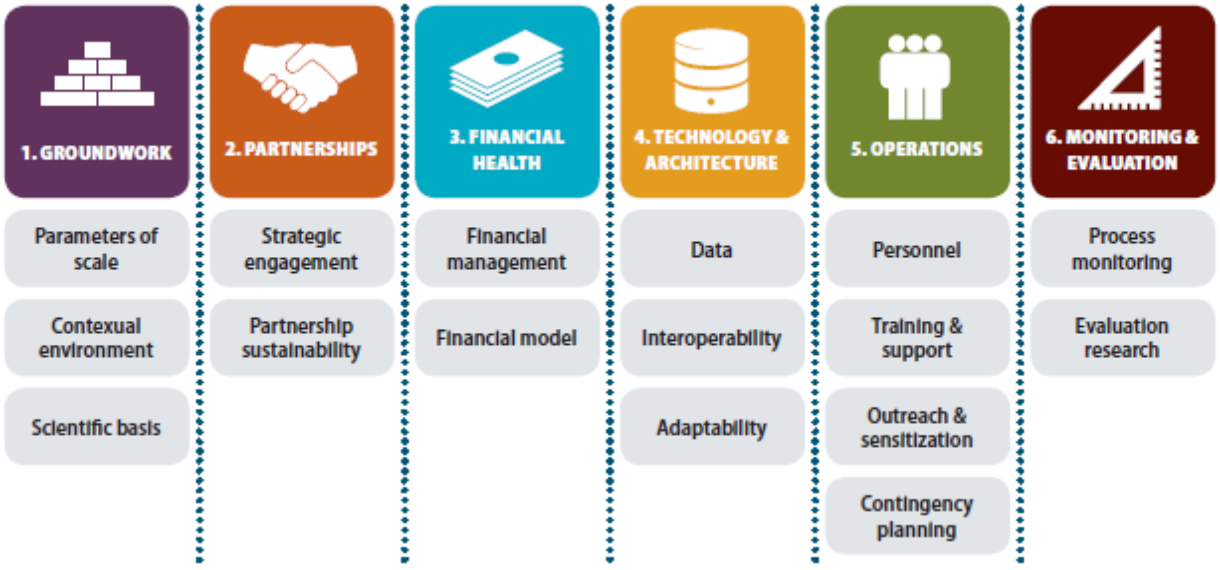
In December 2015, the World Health Organization (WHO) published the MAPS tool that was designed to support mHealth pilot projects plan for scale. There are 6 main axes of the MAPS tool that help governments plan for scaling a mHealth Solution. Within these axes are sub-domains that relate to the overarching axis. The axes and descriptions of each axis can be found in the figure below:

Figure 3: Axes of Scale in MAPS Toolkit

Source: WHO, 2015 MAPS Toolkit

The figure below describes the domains that are within each axis designed to help plan for scale.

Figure 4: MAPS Toolkit Axes and Domains



Source: WHO, 2015 MAPS Toolkit

In 2015, the WHO asked Pathfinder, a key contributor to the development of the MAPS toolkit, to pilot test the tool within two projects Pathfinder supports. In October 2015, SSQH-CS used the MAPS tool to identify the current progress and gaps related to implementing mSanté at scale in Haiti. for each axis and domain, the MAPS tool has specific questions for projects to

take stock of if in place or need to be in place for scale up. The table below highlights the progress and suggested activities, according to the MAPS tool axis, that can be considered if adopting mSanté for a large scale implementation.

Table 5: Summary of mSanté Accomplishments and Gaps identified through the MAPS tool to plan for mSanté national scale

MAPS Axis	Key Accomplishments	Gaps
Groundwork	• Goals for Scale Up defined • Policy and technical environment reviewed • mHealth landscape in Haiti conducted • International mHealth evidence supports positive impact of CHWs using CommCare globally[1] • Algorithms used in mSanté based on MSPP standards aligning with government ASCP priorities	• National mHealth working group or information sharing forum • National eHealth strategy can support SISNU • Gaps in mobile network coverage in the country require working with multiple implementers • Research and documentation of mSanté impact on health outcomes and service uptake planned but not implemented (protocol and tools can be found in the Annex)
Partnerships	• Types of partners necessary for scaling identified and suggested • Champions at MSPP for mHealth identified and engaged • Informal working group with SSQH-Nord and Dimagi established and functional	• Important to establish a national working group to guide and support mSanté adoption and scale ensuring national standards • If adopted at a larger scale, suggest defining roles of partners and establishing a formal mechanism to document scale up and share lessons learned in Haiti and Internationally
Financial Model	• Documentation of mSanté implementation costs conducted • Forecasted the costs of scaling up mSanté(see section below for total cost of ownership model)	• Potential to document value, time and cost savings by introducing mSanté as a case management and data reporting tool compared to paper or mobile data reporting • Potential to document impact on savings at the health system level

[1] CommCare Evidence Base, Accessed Jan 20, 2016 http://www.dimagi.com/wp-content/uploads/2015/02/CommCare-Evidence-Base-March-2015.pdf

	● Draft value chain analysis developed for review including options for business models for scale and sustainability	by introducing a referral component for improving uptake of facility services and improved health outcomes and community follow up ● Mechanism to communicate these findings (if conducted) to stakeholders to support decision making about value for scale ● If interested in scaling mSanté, need to identify future funders and models for financial sustainability.
Technology and Architecture	● mSanté features support data checks for validity and data review processes drafted ● data security protocols and suggestions included in data use plan for review ● Data standards used for DHIS2/SISNU implementation adopted and integrated in mSanté ● Demonstrated in mock testing environment a successful integration of CommCare and DHIS2 information systems. ● Processes for adapting mSanté to different NGOs, departments and partners defined	● Assess infrastructure, support and maintenance mechanisms necessary for local mSanté server storage and fees ● Ensure full alignment with national standards for data security, access and international clinical terminology standards (ICD-10, Snomed etc) ● Explore how CommCare can integrate and interoperate with SISNU and the interoperability layer ● Build local IT and health informatics capacity to design and adapt mSanté over time
Operations	● Analysis of current implementation approach and possible alternatives to reduce cost and improve efficiency of scaling developed ● Training programs and materials developed. Alternative approaches to trainings proposed and included below ● Materials developed to	● Build capacity in order to manage operations at scale, including rolling out and troubleshooting mSanté applications. Consider combining with other national level IT helpdesk support mechanisms ● identify leader in the scale up and coordination and mechanism to coordinate partners, app changes and content changes ● Review and design a national or department level supervision and

	orient sites, facilities and partners to mSanté ● Policies and procedures to issue devices to ASCPs and facilities in place	monitoring system for mSanté roll out. ● Conduct more sensitization and awareness raising among MSPP and Departments, NGOs and other relevant stakeholders ● Refine ways to promote device retention, misuse and theft
M&E	● Protocol and tools developed to document mSanté pilot project (in annex) ● Extensive custom reports developed to support monitoring workforce use and use of data for quality improvement ● Full data use plan developed to support using data and information for performance improvement of ASCPs and quality improvement of community level service delivery	● Define evidence needs for review of mSanté impact on outcomes and improved processes ● Conduct rigorous research study to assess impact on health outcomes ● Develop PMP or other way to document and set targets related to scaling mSanté ● Identify how to disseminate results in Haiti and globally

Cost Modeling for Scale

A cost analysis for scale up was completed in year two of the mSanté implementation. This exercise was originally intended to serve as a reference for USAID and MSPP to better understand the financial investment necessary to scale mSanté. There are several international recommendations for costing analyses specific to mHealth scaling projects. Dimagi has developed the total cost of ownership (TCO) model that allows projects to input budget and scale assumptions to see the total cost of investing in a CommCare application over time and by cost category. The Dimagi TCO model was chosen for this modeling as it is relevant and tailored to CommCare specific deployments.

Two TCO models were developed for this project: 1) Current Implementation Approach and 2) Revised Implementation approach considering new public private partnership models and an innovative training model.

For both models, the overarching assumptions were:

1. Five year scale up from current implementation for year three goals for both SSQH-CS and SSQH-Nord to 10,000 ASCPs over five years in 120 sites with an average of 51 ASCPs per site

2. Covers all major cost categories necessary to scale the intervention
3. Models do not include the cost of training ASCPs in the 5 month module
4. Models do not include MSPP or NGO salaries including the salaries of the ASCPs

For both models presented below, the assumptions are for year 1 implementing mSanté with 2000 ASCPs, year two adding an additional 1200 ASCPs and then in year 3 5,000, year four 7500 and year five all 10,000 ASCPs planned for the country by MSPP.

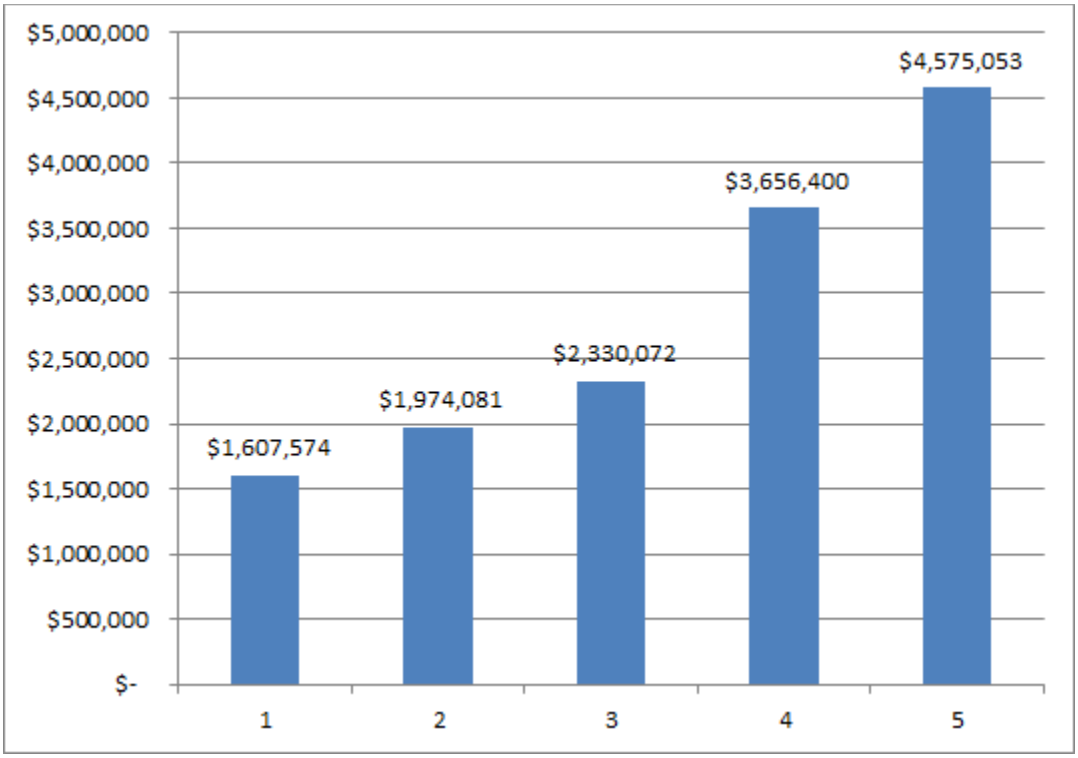
Current Implementation Model

This model describes the costing for a five year scale up of implement mSanté using the current methodology for training and project support. Specific assumptions for this model include:

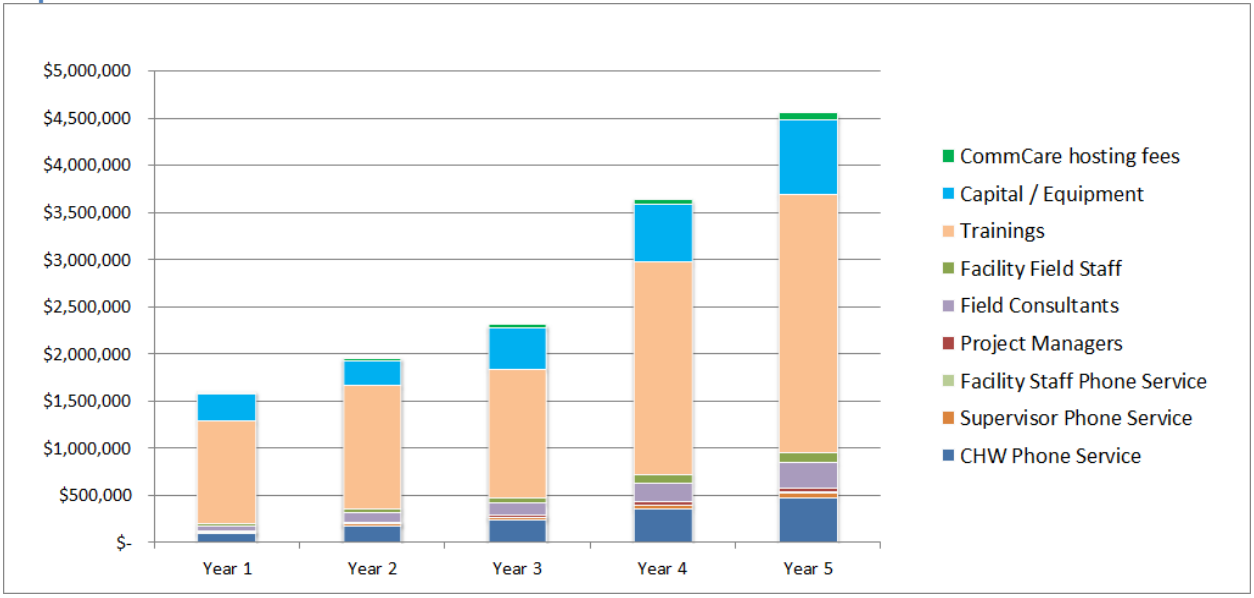
1. mSanté trainings are conducted in person at health facilities for 5 days and 3 day duration
2. mSanté support staff conduct regular in-person site mentoring visits to troubleshoot and mentor ASCPs and facilities on a quarterly basis

Running the current implementation model, the estimated costs for scaling up mSanté over five years can be seen in the graphs below.

Graph 1: Cost in USD to scale mSanté for five years with the current implementation model



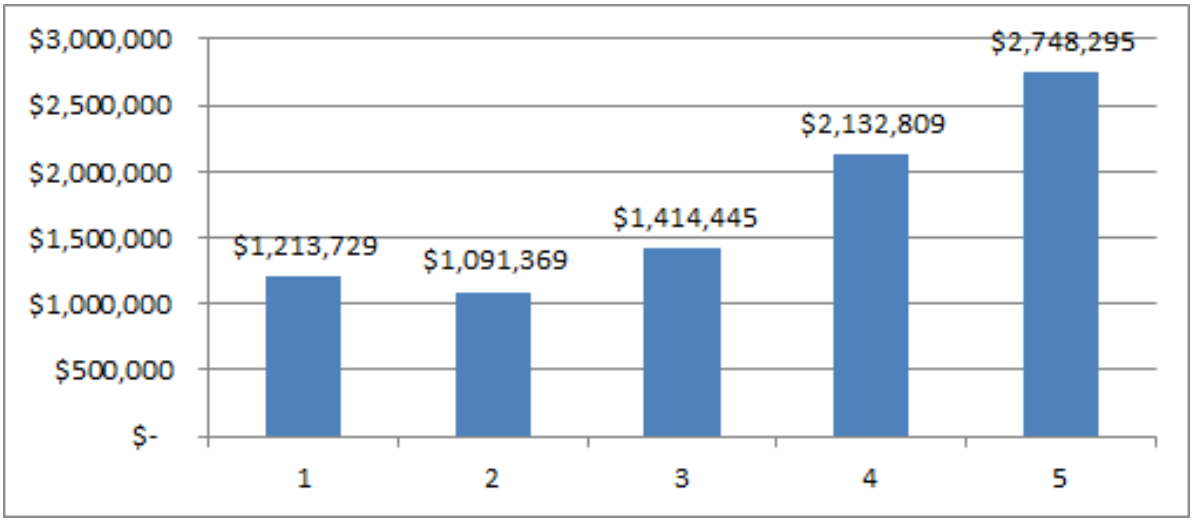
Graph 2: Total Cost by category in USD of Scaling mSanté over 5 years with current implementation model



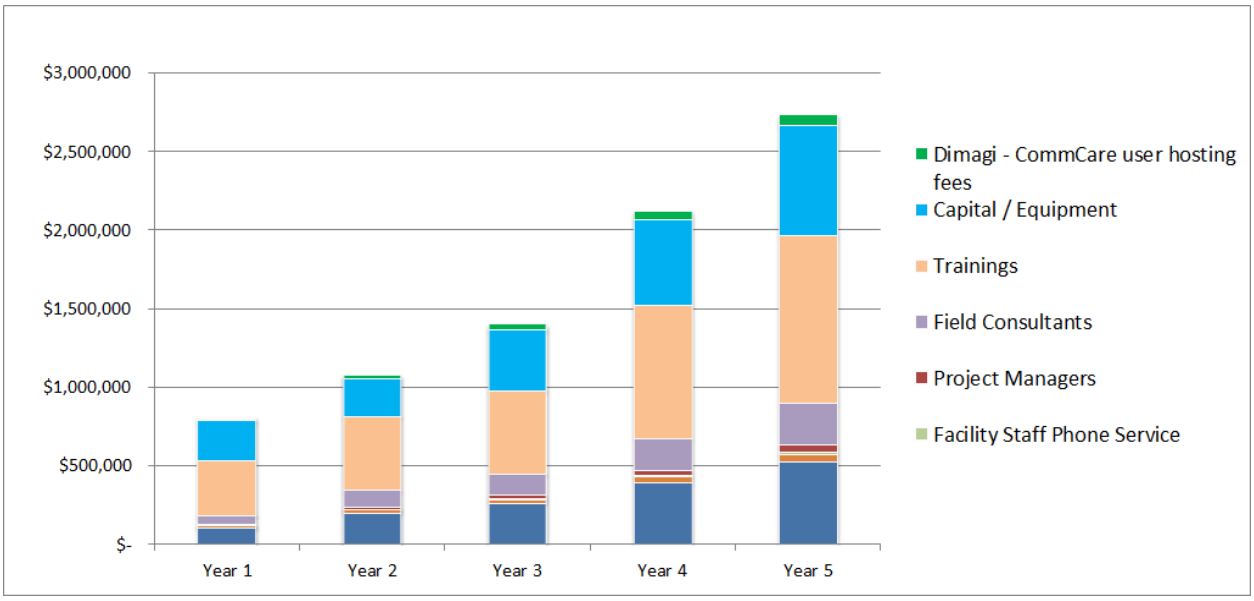
As seen in the graphs above, breaking downs the costs by category results in the largest cost associated with scaling up mSanté is related to training, accounting for 63% of the total cost to scale up. The cost of the devices, CommCare hosting feeds and mobile data services are a minimal cost for scaling.

Based on international best practices, there are several other models for training that can be applied to training ASCPs, sites and supervisors on mSanté. Additionally, based on international best practices and recommendations there are several public private partnership (PPP) models that can be applied including considerations on user willingness to pay and other cost-recovery models. Based on 3 years of implementation experience and lessons learned as well as groundwork done by SSQH-CS of the enabling and partnership environment in Haiti, an innovative model for scale up was developed. When applying new PPP and cost recovery assumptions, an additional costing model was developed and can be seen in the graph below.

Graph 3: Cost in USD to scale mSanté by year for five years using new training and PPP implementation approach



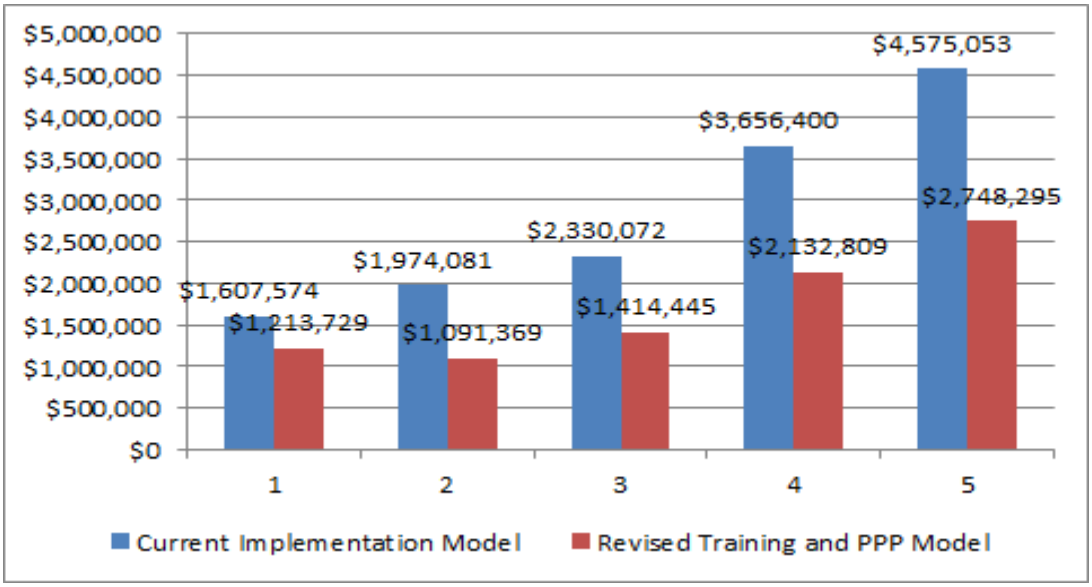
Graph 4: Total Cost in USD of Scaling mSanté with new training and PPP model by cost category over 5 years



As seen in both graphs above and below, the costs are reduced by nearly half by applying a new training approach and incorporating a more locally owned PPP model that builds in some assumptions for cost recovery.

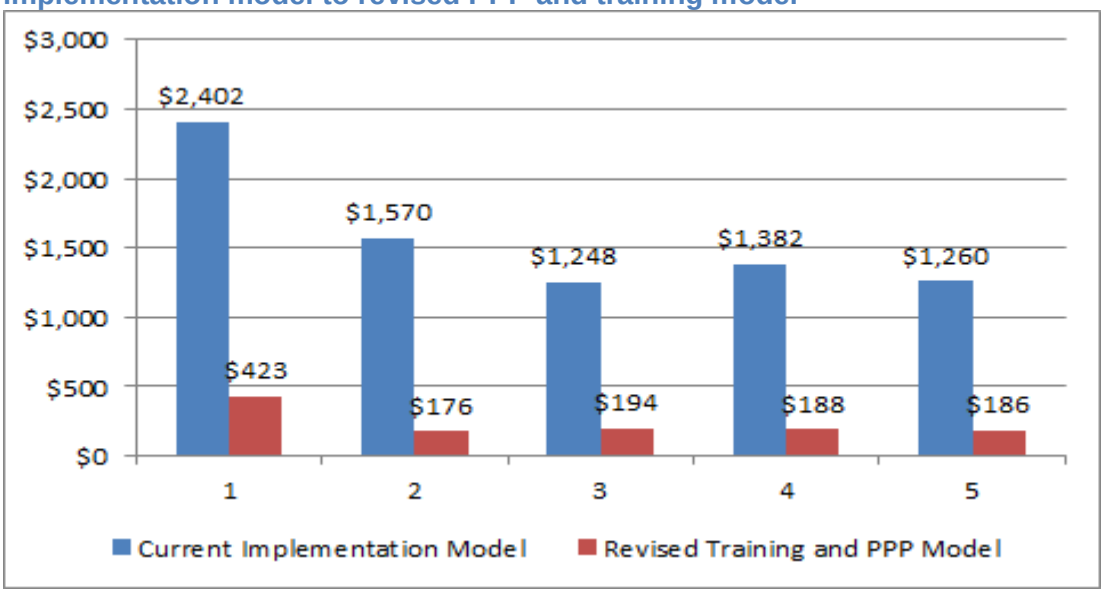
The implementation cost for 10,000 ASCPs in year five in the current model will cost: $4,575,053 compared to $2,748,295; this results in a cost reduction of 40%. Note, it none of the costs for training the ASCP for the MSPP 5 months and 5 modules as well as the salaries for the ASCPs or other government workers is not included in these models.

Graph 5: Total Cost in USD of scaling mSanté over 5 years comparing current implementation model to revised PPP and training model



It is also important to understand the relative cost per ASCP for implementing mSanté. Again, these models assume that ASCPs would not be required to report on paper registers, which cost approximately $75 USD per ASCP and can last for one year. By implementing mSanté, it removes the need for paper registers, saving valuable time and resources of the ASCPs and supervisors needed to compile and aggregate monthly data. Additionally, it is important to note that over the last two years SSQH-CS has spent the time and effort to develop the full system and thereby reduces the costs of continuing to implement over time.

Graph 6: Total Cost in USD of scaling mSanté over 5 years by ASCP comparing current implementation model to revised PPP and training model



As seen in the graph above, the revised PPP and training model results in a significant reduction in the cost to implement per ASCP from $1,260 to $186 per ASCP in year five.

Several business model approaches, guidance for negotiating partnerships and information about user willingness to pay and other cost recovery models have been developed by SSQH-CS and Pathfinder globally and were applied to the Haiti mSanté project. Additionally, SSQH-CS has ideas on overall public private partnerships and local capacity building for mHealth that can be shared. Several tactics have been employed internationally for negotiating formal PPPs with mobile network operators that can be leveraged for this project. These ideas and approaches already developed by SSQH-CS and built into these models can be further explored if there is interest from MSPP or USAID.

Principles for Digital Development

USAID and other multi-lateral stakeholders are promoting 9 principles for digital development. Pathfinder has officially endorsed these principles as an organization to employ them in any mHealth implementation. If mSanté was to be scaled up in Haiti, SSQH-CS would recommend adopting and employing these principles. The principles and the description can be found here: http://digitalprinciples.org/wp-content/uploads/2015/05/Principles-Overview.pdf

The principles are listed below:

1. Design with the user
2. Understand the ecosystem
3. Design for Scale
4. Build for Sustainability
5. Be Data Driven
6. Use Open Data, Open Standards, open Source and Open innovation
7. Reuse and Improve
8. Address privacy and security
9. Be collaborative

SSQH-CS, at the start of the project designed mSanté with these principles in mind. Extensive research and user testing was conducted with ASCPs throughout the entire development and testing phases of mSanté. This included group discussions, extensive field time shadowing ASCPs to understand their daily routines, workflows and home visits. Additionally, SSQH-CS did explore the ecosystem in Haiti to gain an understanding of other mHealth interventions in the country and the currently policy and enabling environment factors in order to collaborate and design a solution that would be complementary to the existing SISNU and eHealth infrastructure in the country.

SSQH-CS also designed mSanté for scale, developed costing models for scale and opened the use of the applications to SSQH-Nord and is available for other organizations interested in using mSanté developed for ASCPs and referral systems in Haiti promoting open and collaborative

partnerships that would help develop one national system for ASCP home visit and client management.

SSQH-CS recommends that if USAID or MSPP have interest in the future to use mSanté that these principles developed and endorsed by USAID continue to be applied.

Lessons Learned and Recommendations

Several lessons were learned over the two years designing and implementing mSanté. These lessons include:

1. Tablets:
    a. Strongest predictor of non-use of mSanté (safety, battery life, broken, etc). The report on breakage is found in the annex to this report
    b. Solutions proposed: Redistribute tablets for facility based use with regular electricity, including supervisors; switch to smart phone use for ASCPs
2. SIM card and data interruptions
    a. several times the billing was wrong and shut the sim cards off for all mSanté users. Work was done with Digicel to correct this
    b. Solutions proposed: ensure that there is close monitoring of billing issues. Consider expanding to using Natcom services in places where there is not a strong Digicel service
3. Resistance to using mSanté because of double data reporting, ASCPs are frustrated with more work and no additional pay
    a. ASCPs are still required to report aggregate HMIS summaries monthly in addition to their using mSanté. Mobile aggregate HMIS reports were developed to support the community department easily transfer accomplishments to the site level data clerk for submission to the DDS for entry into SISNU
    b. Solution: MSPP has decided in Jan 2016 to use existing and other mobile applications for community level data reporting.
4. Some ASCPs trained might have a harder time adopting the use of mSanté due to: age, vision, lack of familiarity with mobile technologies
    a. Solution: aim to recruit younger ASCPs and identify those that might have challenges and individually work with them to address ASCP specific usage
5. NGO adoption of mSanté slow
    a. Solution: work with NGO leadership to show value of system and reports generated. Ensure NGO staff has access to reports and strengthen supervision of ASCPs, Supervisors and facilities to use the system.
6. Coordination of mHealth projects in the country can reduce duplication of efforts and support coordination
    a. Solution: a coordination mechanism or working group for mHealth implementers, either formal or informal, can support coordination.
7. Integration with EMRs or national SISNU possible and can support streamlined clinical care from facility to community levels.

   a. Integration between CommCare and DHIS2 has been demonstrated and is technically feasible. This integration has happened in several countries globally.
8. Explore more advanced business models if going to scale
   a. International best practices and literature on approaches is publically available. SSQH - CS has developed some ideas that informed the costing models presented.

Annexes

Annex 1: mSanté Application Outline

mSanté- Mobile Health for Communities

Mobile Applications developed for Agents de Santé Communautaires Polyvalents (ASCP), Health Facility Referrals and ASCP Supervisors in Haiti

mSanté Mobile Applications Outline

DRAFT for MSPP Review and Input

Version: October 15, 2015

Innovated, Designed, Pilot Tested and Refined by the USAID funded Services de Santé de Qualité pour Haïti - Central South (SSQH-CS) Project

SSQH-CS mSanté Application Outline

Overview of this Document

This document is intended to describe the functionalities of the mSanté Suite of mobile applications developed to support the community health workforce in Haiti. This document outlines the high level design of each of the modules and forms, the key functionalities of the applications, referral triggers and purposes.

This document was produced in order to work with MSPP to ensure that the content, referral triggers and community level indicators being collected are directly in line with MSPP priorities and criteria. SSQH-CS is currently working with the MSPP to ensure this outline and all applications are in direct alignment with the MSPP national ASCP training package and ASCP responsibilities, alongside with the corresponding community level HMIS indicators that mSanté supports to ensure alignment with the national HMIS system.

Background

Under the leadership of the Ministère de la Santé Publique et de la Population (MSPP), Haiti is striving to strengthen community level health services to generate demand and deliver health services at the household level and connect these services to health facilities. In order to do so, MSPP has introduced a new cadre of community health agents, agents de santé communautaires polyvalents (ASCP). ASCPs are expected to provide integrated community level primary healthcare and referrals. ASCPs can benefit from tools that support them to conduct household visits and counseling, and documentation and reporting. The Services de Santé de Qualité pour Haïti (SSQH) Central and South mHealth Project, led by Pathfinder International and supported by Dimagi, Inc. (with HIV content developed by PIH/ZL) explored the innovative use of mobile applications to strengthen the quality of ASCP services and facilitate referrals and counter referrals.

mSanté Overview

In January 2014, SSQH-CS launched mSanté, a suite of mobile applications and reporting tools designed to strengthen quality of the national ASCP program. The goals of mSanté are:

· Develop and implement an openly available suite of mobile applications and reports designed to strengthen the integration and quality of ASCP services through decision support and data collection functions for HIV, Maternal Health, Child Health and Family Planning

· Improve the community and facility referral and counter referral systems and documentation on referrals

· Strengthen supervisor’s ability to carry out mentoring to improve ASCP performance

mSanté Tools and Reports

- ASCP Integrated Service Delivery mobile job aid
- ASCP supervisors mobile job aid
- Facility Referral and counter referral job aid
- Program reports for key stakeholders to view ASCP performance data for decision making and quality improvement
- Community level data reports on the mobile app to feed into national HMIS data systems

SSQH-CS reviewed all national guidelines, ASCP training packages, HMIS indicators for community reporting and built mobile decision support algorithms and reports for mSanté. All mobile applications were built using the CommCare platform, supported by Dimagi. Pathfinder and Partners in Health/Zanmi Lasante (PIH/ZL) contributed the technical content and design of the application and tools.

mSanté Functions

The ASCP application allows them to register clients during household visits and provide HIV, family planning, maternal health and child health services. During an ASCP household visit, the mSanté application prompts capturing key health information about the client. If any danger sign or risk factor is identified during the client visit, the application triggers a client referral to the health facility. The ASCP application keeps a record of all clients and triggers prioritized reminders if the client is found to be high risk or in need of closer follow up. When a client is referred, the client case is assigned to a facility user with the necessary key information to complete a referral is transferred to the facility application where the nurse can see client history and update the case, confirming referral in mSanté. This confirmation of referral, with client follow up notes, is transferred via the application back to the ASCP, closing the referral loop. Supervisors also have an application that allows them to view the ASCP performance and conducting mentoring visits.

Community Data for Quality Improvement and National Level Reporting

Data collected through mSanté provides information on the health of clients and information on services delivered through ASCPs, including referrals for higher level care. mSanté also provides data on the performance of ASCPs using the application and providing services. Ensuring mSanté data reaches health facility and is used can support integrated quality improvement.

- ASCP mSanté application captures all HMIS community level indicators and presents monthly summaries on the mobile device (this needs verification by MSPP to ensure all indicators are captured)

- ASCP supervisor mSanté application automatically aggregate all of the ASCPs monthly reportable data on their mobile device, allowing them to easily report to the facility data clerk for verification and submission to the DDS as per the national process

mSanté Mobile Applications Overview

There are three CommCare applications that are part of mSanté:

- ASCP application: covers Family Planning, Maternal Health, Child Health and HIV
- Facility Application: Allows acceptance of referrals
- Supervisor application: supervision checklists and HMIS Reporting

Key Functions of mSanté ASCP mobile application

Child Health	Pregnancy	Family Planning	HIV
Malnutrition	Registration	Enrollment	Holistic pt info
Vaccination Tracking	ANC Visits TT Vaccine	Referral for long acting methods	LTFU Tracking
Vitamin A	Folic Acid/Vit A	FP refills	Adherence
Deworming	HIVSTI screening	HIV/STI screening	HIV/STI Screening
Diarrhea	Birth Planning		TB Screening
TB	Birth Details for mom and baby	Focus on youth counseling	PMTCT including EID
Other symptoms and referral	Risk Factor identification and referral		Other Illnesses identification and referral
Counseling	Counseling	Counseling	Counseling

ASCP mSanté Application

Family Planning

This module allows an ASCP to register clients for FP, enroll and refer for enrollment. During follow up visits, the ASCP is reminded when the client is due for refill and assesses side effects.

The following methods are included into the ASCP counseling protocol and clients tracked over time, with questions, side effects and other counseling information, specific to the method that they are on. If clients choose not to enroll in a method during an ASCP home visit, the application will prompt the ASCP to continually counsel on contraceptive benefits with the client during subsequent home visits. The following methods are included in the counseling protocol:

1. Tubal Litigation
2. Intrauterine Device
3. Hormonal Implants
4. Injectable (Depo-Provera)
5. Oral Contraceptive (Pilules)
6. LAM (Lactation Amenorrhea Method)
7. Standard Days
8. Emergency Contraception
9. Female Condoms
10. Male Condoms

Family Planning Client Registration

This process is shared with pregnancy registration and child registration. Basic demographic details are captured such as name, address, marital status, significant other and phone number. If users are on a method, ASCPs enter refill date in order to track and go do home visits for refills.

For clients who have not yet chosen a method, the ASCP answers these questions for counseling and enrollment or referral for chosen method:

1. Evaluate for Pregnancy
2. Rule out any methods based on client choice and relevance (i.e. if client hasn't recently give birth, LAM is not an effective method)
3. Provide counseling for women using the basic counseling strategy plus model
4. Method Selection
5. Referral to Clinic to start method (if not a method that the ASCP can initiate during a home visits)
6. HIV Counseling and referral to the health facility for testing
7. STI Evaluation of symptoms using the syndromic management approach and referral to clinic for STI screening
8. Distribute Condoms and Document Distribution.

Once the client has chosen a method, the point of initiation of that modern contraceptive method (either at the home during ASCP visit or at the health facility) is depended on which method the client chooses. ASCPs, as described in the sections below. However, regardless of client choice

of method, once a client is enrolled as a family planning user in the ASCP mSanté application, they will still receive follow up ASCP home visits after initiation to continue counseling, check for side effects and client satisfaction with the method determining if there is a need to switch methods or continue on that method.

Family Planning Initiation during Household Visits

According to the national ASCP curriculum, ASCPs are allowed to initiate the following short acting contraceptive methods: Male and Female Condoms, Oral Contraceptive Pills and Depo-Provera. ASCPs are also allowed to do refills of these methods. The mSanté ASCP application has a dynamic counseling algorithm, based on the Basic Counseling Strategy Plus method that ensures all clients receive the appropriate education on all contraceptive methods and provides counseling on side effects, with a focus on counseling for young people as well.

Family Planning Follow Up Visit Forms

This is the workflow of a family planning follow up visit form. This form is used for all women who are enrolled on either a short acting contraceptive method or a LARC. Again, if a woman enrolled on a short acting contraceptive method during an ASCP home visits (i.e. Condoms, male and female, Pills and Depo-Provera) or if the client chose a Long Acting Reversible Contraceptive method (LARC) that was initiated at the facility level, she will be followed during subsequent home visits to assess for method satisfaction, side effects and receive additional counseling or be linked to other services or counseling the client might need.

1. Greet client and asks about clients overall satisfaction with the method, and if she is having any challenges (adherence, side effects, overall comments about the method)

2. Evaluate woman for severe side effects. The questions asked depend on the method enrolled in.

3. Option to change woman's family planning method if side effects are found or client wants to switch methods. If this is the case, the ASCP refers the client to the health facility to switch methods.

4. If the client is on a short acting method (condoms, pills or Depo-Provera), the application will prompt for when the refill needs to happen (as the date of initiation is recorded in the application)

5. HIV Counseling and referral to the health facility for testing

6. STI Evaluation of symptoms using the syndromic management approach and referral to clinic for STI screening if symptoms are found

7. Distribute Condoms and Document Distribution.

8. General counseling messages about primary health care, nutrition etc. also available

Facility Confirmation Referral for Long Acting and Reversible Contraception (LARC)

Once a client has been registered by an ASCP, and the client chooses a longer acting method, the ASCP refers the client to a specific facility located in the catchment area to get counseled and enrolled on the chosen contraceptive method. Once this occurs, the facility application will receive this referral with key information about the client. When the client arrives at the facility, the facility referral application has the ability to confirm this referral. It is important to note that the facility application can confirm referrals and the ASCP is allowed to complete a follow up form to document client report of referral (meaning if the ASCP referred a client to one facility, but perhaps the client went to another health facility to get enrolled, the ASCP can document that). Regardless, after any referral is made by the ASCP the application allows them to return for a follow up visit. During this time, the ASCP may notice that the client has enrolled on a method at a different facility; therefore the ASCP can confirm this referral as complete, document the method chosen and continue to follow the client for side effects, additional counseling, etc. For the referral confirmation functionality, the facility application or ASCP application enters the following information:

1. Date of Referral Completion
2. Check if woman enrolled in a method
3. If woman did enroll, the application will prompt the ASCP or clinician to complete the family planning enrollment algorithm again to allow her to have the opportunity to choose a method (The options are the standard list of methods mentioned above)
4. Any notes about the woman from the facility visit that will be seen by the ASCP

Once the referral has been completed by the facility, the ASCP application will be updated to show that the client has indeed completed the referral, can read any facility notes about that client and it will trigger the client to now be enrolled in follow up visits.

Other Family Planning Referrals in the ASCP application

1. Referral to replace an Implant
2. FP Side Effects
3. STI Symptoms

Maternal Health: Pregnancies and Post-Natal Care Module

This module covers prenatal care, deliveries and post-natal care for the woman, including post-partum family planning. Post-natal care for children (from birth to 5 years) is covered in a separate module called Child Health.

Client Registration

This process is shared with family planning, pregnancy registration and child registration. Basic demographic details are captured such as name, address, marital status, significant other and phone number.

Enrollment as a Pregnant Mother

The application supports registering the following clients for as pregnant:

- Females over the age of 12 years old
- Females who are not currently marked as pregnant

During registration the following is captured:

1. Last Menstrual Period (this is used to calculate the expected delivery date (EDD))
2. Check if first time pregnancy (yes/no)
3. If not first pregnancy capture details on previous pregnancy
    1. # of previous pregnancies
    2. # of child births
    3. # of live births
4. Medical history (to assess high risk). The following conditions are checked
    1. Diabetes
    2. Hypertension
    3. Pre-eclampsia
    4. Eclampsia
    5. Preterm Labor
    6. Infection during labor or post-partum
    7. Too long/obstructed labor
    8. Anemia

Using information in the form, a woman may be flagged as high risk and will be followed more regularly and encouraged to visit the facility for ASCP (although all women are encouraged and counseled to go to the facility, high risk women have more frequent follow ups)

Prenatal Home Visit

This form is filled out during the time period of prenatal visits, so prompts the ASCP to follow according to the times when a woman is expected to go in for an ANC visit, based on their previous visit date and stage in pregnancy. The ASCP is prompted to provide the following counseling, services and distribution of key commodities.

1. ASCP asks and confirms if the woman has been to the facility for an ANC visit and if yes, the ANC card number and details about the ANC visit are recorded.
2. ASCPs prompted to ask for pre-natal danger signs, and if detected the client will be referred to the health facility
3. Documents if the ASCP gave iron or folic acid to the mother during a home visit
5. During the third trimester, the ASCP is prompted to counsel (and record the information) about the birth plan (including choice of facility, supplies ready, transport identified, blood donor secured in case of emergency, family member or friend who is identified to support the mother, etc.). Counseling on post-partum family planning is prompted

6. HIV Counseling and referral to the health facility for testing
7. STI Evaluation of symptoms using the syndromic management approach and referral to clinic for STI screening if symptoms are found
8. Distribute Condoms and Document Distribution for dual protection
9. Counseling messages available and are triggered based on the trimester and available by Trimester
10. General counseling messages about primary health care, nutrition etc. also available

Facility Application Referral for Prenatal Danger Signs

If the ASCP identifies a woman as potentially high risk the ASCP can refer the woman to the clinic. In the facility application, they fill in the following information. As seen in the FP module, an ASCP can also complete the referral form for reasons given above. The following is captured:

- Date of Referral Completion
- Any notes about the woman from the clinic to the ASCP for closer follow up

Delivery Recording Form

This form appears in the application if the woman is in her third trimester. It collects the following:

1. Type of delivery (natural or C-section)
2. Complications (yes/no/unknown)
3. Referral out for complications (yes/no). This is asked if yes to complications
4. Delivery place - home, clinic, TBA or home, other (free text field)
5. Did TBA assist with delivery (yes/no)? This is asked only if home deliveries are recorded
6. Date of delivery
7. Number of babies (1, 2 or 3)
8. For each baby born
    1. Outcome of delivery (still birth/live birth)
    2. Gender
    3. Child named and entered in child module separately (*A new client will be registered for each child who is alive)*
1. If mother is still alive (yes/no)

Although this is <u>not</u> included in mSanté to date, a maternal death audit could potentially also be built into the system to capture the details of the death.

Post Natal Follow Up Home Visit

This form triggered 10 days before her expected delivery date (EDD) recorded in the application. Once a woman's EDD arrives, the application will enable the ASCP to go visit the client. Once this form is completed, or 42 days have passed since the EDD, the woman is

closed as a pregnancy case in mSanté. Additionally the child born is registered in the child health module and the ASCP is prompted to do child follow up through that module. The application prompts the ASCP to conduct home PNC visits to the mother 3-4 times post-delivery (stating immediately at birth) to continually check on mother and child danger signs. It has the following workflow:

1. Asks if the client has attended a PNC Visit at the facility (yes/no) - this question is only asked if the woman has not already visited the clinic. The date that the mother visited the clinic is also captured.
1. Check on post-partum mother danger signs
2. Check on Infant Danger signs and referral
3. Referral if mother has danger signs
1. Advises ASCP to give Vitamin A provided (yes/no)
2. Postnatal maternal, infant and child counseling messages are prompted
3. Client is counseled on post-partum family planning and referred if the client chooses

Facility Application Referral for Postnatal Danger Signs

Once a mother has been referred for Post-natal danger signs, the case will be transferred to the clinic. Again, either the clinic or the ASCP can fill in the details of what happened. The following is captured:

1. Date of Referral Completion
2. Any notes about the woman from the clinic for home visit follow up for the ASCP or instructions

Child Care Module

This module covers post-natal infant care and tracks infants immediately born through children up to 5 years old. The primary functions of the application are to monitors growth indicators (weight, height); determine malnutrition status, referral for treatment and vaccination status.

Vaccination Calendar

The application relies on the following vaccination calendar approved by MSPP for Haiti and can be delivered to all infants and children by the ASCPs themselves according to the national ASCP training package. This information is also recorded if the child is vaccinated at the facility by the ASCP prompting to ask questions of the mother and looking at the immunization card.

Vaccination	Availability
BCG	After birth
Oral Polio at Birth	Between birth and 15 days post birth
Polio 1	42 days after birth
Polio 2	28 days after Polio 1
Polio 3	28 days after Polio 2
Polio Booster	1 year after birth if Polio 3 has been received
Rotavirus 1	42 days after birth
Rotavirus 2	28 days after Rotavirus 1
Measles	9 months after birth
Pentavalent 1	42 days after birth
Pentavalent 2	28 days after Pentavalent 1
Pentavalent 3	28 days after Pentavalent 2
Vitamin A	6 months after birth, then offered every 6 months

Direct Child Registration

Children are registered through the same process as registering a person for family planning or pregnancy. If a pregnant mother has delivered, then the application records the infant's basic birth outcomes and demographics and that case is transferred from the pregnancy delivery form to the child module to follow for the coming 5 years. Basic demographic details are captured such as name, address, age, guardian's name, and phone number. Already received vaccinations will also be recorded.

Delivery

Children can also be created from the delivery form. This will capture their gender, date of birth and guardian information. Their name can be specified in the Post Natal form and then the case is transferred to the child module.

Post Natal Child Follow Up

This form is triggered at the time of the woman's EDD and is prompted and used until the child is 42 days old. Ideally it is filled out at least 3-4 times after the child has been born (but not the demographics that were recorded during the first ASCP home infant visit, i.e. name etc.) The following is collected in the form:

1. Child Name
3. Vaccinations already received at facility or administered by ASCP during home visits
4. First PNC Visit questions (breastfeeding, weight, stool etc.)
5. Baby breastfeeding status
6. Child Weight
7. Counseling messages for infant and child health
8. Check for infant danger signs and refer if necessary

Child Visit Form (After Registration)

This form is filled out when child is older than 42 days old but younger than 5 years. The ASCP is prompted to visit the child every month. The following information is collected:

1. Weight, MUAC collected and malnutrition scores calculated and classified into no malnutrition, moderate malnutrition and severe malnutrition. If malnourished cases are identified, the application prompts the ASCP to refer to the facility.
2. Vaccination schedule tracked, if child is missing any vaccinations then the application prompts the ASCP to administer and record vaccinations
3. De-worming is assessed and document if pills are distributed
4. Diarrhea is assessed and ORS provided and documented, client is referred to the facility for future care
5. Infant Breastfeeding status
6. Counseling messages on infant and child health
7. TB screening and referral
9. Other Referrals: (Cough, Fever, Diarrhea, Anemia, Malnutrition)

Facility Application Referral for Postnatal Danger Signs for Infant, Child and TB referrals

This occurs at the clinic. Either the clinic or ASCP can fill in details of what occurred. The following is captured:

1. Date of Referral Completion
2. Any notes about the woman from the clinic to the ASCP

HIV Module

The HIV module operates a bit differently than FP, maternal health and child health. For the HIV module the first point of entry into mSanté is at the HIV site manager level, which is in charge of HIV care at the facility. Once a client arrives at the facility, the site manager will fill in the details (described below) and then work with the client to assign the client an ASCP that the client feels comfortable to be followed by. The Case is then transferred to the ASCP for home visit follow up care and tracking.

HIV Site Manager Role

The HIV site manager functions by receiving patients and entering them in mSanté, then assigning the cases to the ASCP tracking patient status, promoting reduction of lost to follow up and promoting adherence to medications including ARV.

Register HIV Patient Form

This form will require the HIV site manager to first choose an existing client already registered by the ASCPs their catchment area with mSanté, or register the new client themselves. Data collected includes:

1. Client demographic information
3. HIV demographic information (National code, Patient registration number at the site, date of visit, etc.)
4. Assign the client to an ASCP

Reassign HIV Client Form

This module contains a single simple form that allows the HIV site manager to change the ASCP that provides HIV services to a given client.

ASCP HIV Home Visit Form

This form allows HIV site managers and ASCPs to provide home based services, especially counseling and HIV related patient adherence tracking. The HIV site manager has access to this too in the event that they wish to conduct home visits.

The list of HIV patients in the application will be prioritized based on the next facility visit referencing the time since the last visit. It is expected that most patients will be visited monthly. However, certain patients will (in the future, this is a feature planned to be built out) be flagged in the list to indicate they need visits every 2 weeks (low med adherence), low clinic visit adherence or missed appointments, new patient, if a patient is sick (certain conditions and prompts are included here). The following data is collected:

1. General Home Visit information (is it a routine visit, sick patient visit, missed a clinic appointment visit)

2. Routine Visit (medication adherence including counts of missed doses, reasons for missing, how many doses missed, etc.); Counseling messages on adherences; next clinic visit date, next home visit date, ARV and other meds status (currently on medication, check for adherence levels, document if the client has stopped taking medication, etc.) if the client is not adherent to any of the above, the ASCP will refer the client back to the HIV site manager application.

a. Medications currently tracked: ARV, Cotrimox, Anti-TB, INH, Vitamin B6, asking if on a contraceptive method and if not, prompts them to counsel using the FP module form.

3. Sick patient Visit: Assesses patient symptoms and refers client to the facility

5. Missed clinic visit: The application will know when the client missed a visit (date of facility visit is input into the application) and asks if they missed any clinic visits and documents the reasons for missing, etc.

a. In the near future, the application will also tracks adherence to scheduled home visits by the ASCP and flags the case if the ASCP has not conducted home visits according to the schedule

6. DOTS visit allows the ASCP to record that they have observed the patient taking any of the tracked medications, including DOTS if they are registered as enrolled.

7. Referrals for TB test, PMTCT/ARV, Side Effects, and for Anti-TB treatment are generated on risk factors, responses that trigger referral

HIV Site Manager Facility Visit Form

This form allows the HIV Site Manager to track facility level patient care services and information so that this information can support the ASCPs to conduct targeted follow up of HIV clients based on their health status and current medications:

1. CD4, viral loads, weight
2. Documents the medications the patient is taking, when they started, when they stopped, reasons for stopping etc.
3. Processes referrals from the ASCP for PMTCT, Anti-TB, TB tests, and Side Effects
4. Tracks TB testing and treatment status, including medications
5. Documents pregnancy status and triggers follow up of PMTCT specific clients
6. Tracks patient adherence to scheduled facility and home visits

It is important to note that SSQH-CS is still developing the full HIV module and is currently in pilot testing phase with a few ASCPs, while the form continues to be revised and updated.

PMTCT

The mSanté team is currently developing this aspect of the application, full workflows are being developed right now and it is an expected feature in the coming quarter, with full tracking of HIV positive pregnant women and newborn infant diagnosis and enrollment on treatment.

mSanté Supervision Application Form Overview

This module supports the ASCP supervisor to monitor ASCP performance in providing home level services and using mSanté. In some cases at sites, the ASCP supervisor can be an ASCP themselves, or be a community nurse. You can “turn on” the supervision module in the ASCP application if the former is correct, or just show the supervisor form (and not the other ASCP content) if they are not an ASCP in addition to their supervisor status.

The mSanté Supervisor form covers the following information:

1. There is an inbuilt reporting form that will display each of the ASCP monthly performance according to the HMIS indicators and other programmatic indicators that might help the supervisor to effectively provide support to improve the quality of the ASCP services. The following indicators are calculated for each CHW monthly and display directly within the application for ease of use:
    - Total FP Patients seen by ASCP
    - # of FP Patients Visited in last 30 days
    - Total Pregnant Patients being tracked by the ASCP
    - Number of Pregnancies visited in the last 30 days
    - Number of Pregnancies that have been visited at the home that were scheduled in the application, and a flag is raised if this is less than 80% of the pregnancies that are registered in mSanté for by that ASCP
    - Total Child Patients for ASCP (children between 0 and 5)
    - Number of child patients visited in the last 30 days
    - Number of child patient visits that are triggered in the application and a flag is raised if the ASCP has visited less than 80% of the clients in their ASCP client list
    - Total Referrals that have been generated in the last 30 days
    - Total of referrals that were generated by ASCPs and are still open in the last week
2. Assess ASCP mSanté application usage: this asks several questions about how the ASCP is using mSanté and any challenges
3. The form allows the supervisor to conduct key mentoring advice for the ASCP (using the ASCP performance data to drive the meeting. Then it allows the Supervisor to document any recommendations or corrective action the ASCP should complete in the next month. Then during the next monthly meetings, the recommendations will appear to continually understand and update any recommendations if performance improved, and document any new performance recommendations made for the ASCP that month.

Rally Post Module

This module allows ASCPs to document services delivered by the ASCPs during a rally post session. The following information is collected through this form:

1. Name of ASCP who is in charge of the rally post that day and responsible

2. Name of the supporting ASCPs that are also available during the rally post\
4. Location of where the rally post happened
5. If records the group counseling topics covered during the rally post visit by a drop down list of type of messages (vaccination, ANC, sanitation etc.) and prompts the ASCP to record the number of people that were sensitized (by topic area)

When clients are offered key services during a rally post, they are entered into mSanté using the standard service delivery forms that were described above and thereby entered into mSanté. It was designed this way to ensure that the client management can continue at the household level after the rally post for improving the continuum of care for integrated client management.

Note: the Rally Post module is still being reviewed and expanded to meet the needs of MSPP.

Annex 2: mSanté HMIS Outline

mSanté- Mobile Health for Communities

Mobile Applications and Reports Developed for Agents de Santé Communautaires Polyvalents (ASCP), Health Facility Referrals and ASCP Supervisors in Haiti

mSanté Community HMIS Indicators Outline

DRAFT for MSPP Review and Input

Version: October 15, 2015

Innovated, Designed, Pilot Tested and Refined by the USAID Funded Services de Santé de Qualité pour Haïti - Central South (SSQH-CS) Project

Purpose of this Document

This document is intended to describe the functionalities of the mSanté Suite of mobile applications developed to support the community health workforce in Haiti. Subsequently, the document outlines how the mSanté suite of applications contributes to the national community level HMIS reportable indicators. This document describes what data is collected and how this data can potentially contribute to the national HMIS system in Haiti, SISNU.

This document was produced in order to work with MSPP to ensure that the community level indicators being collected through mSanté are directly in line with MSPP priorities, standards and criteria. The Services de Santé de Qualité pour Haïti - Central South (SSQH-CS) is currently working with the MSPP to ensure this outline and all mSanté applications are in direct alignment with the MSPP national ASCP training package and ASCP responsibilities, and all data collected through these applications are aggregated accurately to inform the facility level report that is submitted to the DDS for electronic entry into SISNU. SSQH-CS has worked to aggregate the ASCP monthly report as a new module on their application so they have quick ready use of the feature to share data with their supervisor. The supervisor also will have a module on their application that allows them to see the summaries of all of the ASCPs they supervisor to fill in the facility report with the data clerk. The development of this feature of mSanté is currently underway. The indicators outlined below are planned to be programmed into mSanté applications to display this data for ASCPs and Supervisors monthly.

The purpose of this document is to the review with MSPP the indicators to ensure they are complete, accurate and relevant for the community data that feeds into the national SISNU.

mSanté Community HMIS Indicators that are collected

The mSanté system was designed to help the ASCP have higher quality performance. Please see the supporting document “mSanté Applications Outline” dated October 15, 2015, which describes the functionality of the application. The following indicators will be aggregated monthly and available in a module for the ASCP to view monthly. The ASCP Supervisors will see an aggregate of all indicators for all ASCPs in the facility that they supervise and would contribute to the HMIS report. The numbers listed below (in the front of the indicator) refer to the MSPP national HMIS reporting form indicator numbers (found in the Annex for reference).

#1: New and Recurring Visits (all non-Institutional for the following breakdowns):

a. Infants <1 month

b. Infants 1-4 months

c. Infants 5-14 months

d. Pregnant Women

e. FP Clients

Note: The following data is not currently captured for #1 for community visits, but the application could be modified to capture this community data:

1. Young Adults 15-24 visits
2. Other Adult Visits
3. Disabled persons (motor and sensory)

#6: Management of women and mothers:

ANC visits 1-5 for women in 0-3 months, 4-6 months and 7-9 months is captured. However, this is prompting the ASCP to ask the client if they have gone to the facility and records if the client says yes, however this should not replace the facility ANC report, therefore will not be available on the ASCP or the Facility aggregate HMIS monthly report.

Therefore, mSanté is not contributing to this #6 Facility level indicator. Rather, we are prompting the ASCP to go follow the women and ask her to go to ANC if she has not to improve demand generation. This information could be compared to facility registers if interested.

#6.1: Management of Pregnant Women

The application is prompting the ASCP to identify women that might be at high risk and refer them. We have this information, however, these are not community indicators, and we will not include in the ASCP monthly report. However, we do have this information for the ASCP home visits based on client responses to their facility visit questions:

- Number of pregnant women at risk (identified through mSanté ASCP) application
- Number of pregnant women that have received Iron Folate at facility
- Number of women that have developed a birth plan (ASCP documents birth plan during home visit)

Other indicators in #6.1 are not captured in the ASCP application as of yet.

#6.3: ANC Vaccination

The application asks the ASCP to record if the woman got vaccinations at the facility. As they ASCP do not give vaccinations to pregnant women, these indicators will not be included in the final ASCP monthly report for community level services. However, the information (based on client response) is available in mSanté based on client report.

1. Pregnant women receiving Dt1, dT2 and dTR (can be broken down by age 15-49)

#7: Deliveries

mSanté collects all <u>community</u> births by matron formee and others for:

- <15 years, 15-19 years, 20-24 years, 25-29 years and 30+ years

We are asking the client and recording information about birth, at facility, with TBA or other home birth, but this information should not replace the facility birth registers.

#7.1: Births

mSanté collects all community level births and information for this indicator (for the non-institutional indicators)

#7.2: Post-natal Visits

mSanté collects the following:

1. Women receiving Vitamin A

2. Post-natal visits at facility (NOTE: we will not include as an ASCP indicator, but mSanté tracks this)

3. Home visits 0-3 days

mSanté is not collecting women MAM/MAS or PB<210 for indicator #7.2. However, this can be revised in mSanté.

Other maternal health indicators for #7:

mSanté collects the number of maternal deaths (for those women registered by an ASCP in mSanté during house visits)

#7.3: Family Planning Clients

mSanté collects the total number of acceptors and continuing users, disaggregated by 25 years below and above. The following methods are tracked: PC, PP, Depo, Implant, DUI, Collier, MAMA, Condom Ligature, Vasectomy and Condoms.

The application also tracks the contraceptives distributed at the community level to each beneficiary (PC, PP and Depo). The application currently doesn't, but can be updated to track number of condoms distributed as well.

#8: Child Health

The application tracks: Infants < 6 months, infants 6-23 months and 24-59 months for the following indicators:

- Children (MAM 115 <PB < 125)

- Children (MAS PB<115)

For children 6-23 months, 24-59 months, 60+ months, mSanté collects

- Distribution of Vitamin A

- Albendazole

The application also collects and tracks vaccination data for each child (which is administered at the community level or at rally posts). This is not listed in the latest version of the MSPP form.

Note: Please see the mSanté data use plan, dated Oct 15, for a proposal for MSPP input on how these indicators will be collected, aggregated, reported and utilized, given the MSPP would like to adopt this into SISNU.

Annex 3: mSanté Reports Outline and Definitions

The following reports are available through the mSanté web portal. Many of these reports are designed to summarize data per the standard MSPP reporting form that facilities use on a monthly basis.

Each report can be filtered by a time period and by department, facility and ASCP. Data can be summarized per ASCP or per facility.

Report	**Description**
1 - Répartition des visites	The number of visits made over the chosen time period to new and existing pregnancy, family planning, children less 1 year and children 1-4 years.
6.1 Prise en charge des femmes enceintes	Over the chosen time period to the number of visits to high risk pregnancies, visits to pregnant women in which iron folate was provided, visits in which birth planning occurred, deaths and miscarriages.
7 - Accouchements	The number of community deliveries that occurred in the chosen time period. These are categorized by age of the women in years (<15, 15-19, 20-24, 25-29, 30+). The number of deaths at delivery is also shown.
7.1 - Naissances	The number of community births that occurred in the chosen time period, based on post-natal visits. These are categorized by the weight of the child at birth (<1.5kg, 1.5-2.5kg, 2.5kg+, unweighed) and by whether the baby was immediately breastfed.
7.2. Suivi Post Natal	Over a chosen time period, this shows postnatal visit information. This includes the number of post natal home visits within 3 days of delivery, 3-6 days of delivery and 6+ days of delivery. It also shows the distribution of Vitamin A to postnatal mothers.
7.3. Clients PF (Acceptants - Clinic)	This shows the number of new FP clients who enrolled at the clinic over the chosen time period (based on information recorded by the ASCP). This data is

	categorized by age (< 25 years, 25+ years old) and by method (PC, PP, Implant, Injectable, IUD, MAMA, Collier, Females Using Condoms, Tubal Ligation, Males Using Condoms and Vasectomy.
7.3. Clients PF (Acceptants)	This shows the number of new FP clients who enrolled in the community over the chosen time period. This data is categorized by age (< 25 years, 25+ years old) and by method (PC, PP, Injectable, MAMA, Collier, Females Using Condoms, Males Using Condoms and Vasectomy.
7.3. Clients PF (Contraceptifs distribués)	Over the chosen time period, the number of PC Pills, PP Pills and Injectables distributed.
7.3. Clients PF (Utilisateurs)	Over the chosen time period, the number of visits to family planning clients. This data is categorized by age (< 25 years, 25+ years old) and by method (PC, PP, Implant, Injectable, IUD, MAMA, Collier, Females Using Condoms, Tubal Ligation, Males Using Condoms and Vasectomy.
8 - Prise en charge de l'enfant	Over the chosen time period, the number of visits to children. This report shows total visits, first visits, albendazole distribution, visits in which children were weighted, visits to underweight children, visits to severely underweight children, visits in which MUAC was measured, visits to MAM children and visits to SAM children. These indicators are categorized by age (0-6mo, 6-24mo, 24mo+) and gender.
8 - Prise en charge de l'enfant (Vaccination)	The number of vaccine distributions over a chosen time period. Vitamin A doses (1-3+), BCG, Measles, Penta 1, 2, 3, Rota 1, 2, Polio 0,1,2,3 are allow shown. These indicators are categorized by age (<1 yr., 1 yr. +) and gender.
9 - Conseils	The number of people counseled over the chosen time period (based on rally posts and home counseling sessions). Indicators are categorized by counseling topic (Child Vaccinations, Child Nutrition, Child Danger

	Signs, Newborn Care, ORS, Importance of ANC, Postnatal Clinic Visits, Pregnancy Danger Signs, Clinic Delivery, Family Planning, Tetanus Vaccination, Fecal Hygiene, Hygiene in Environment, Anti Vector, Prevention of HIV, Prevention of STI, Prevention of Malaria, Prevention of TB, Cholera, Other)
Case Summary - Children	This shows a summary of children registered. The children are categorized by Gender, Nutrition Status Based on Weight (Normal, Underweight, Severely Underweight), Nutrition Status Based on MUAC (Normal, MAM, SAM), and vaccinations and vitamins received.
Case Summary - FP	This shows a summary of family planning clients enrolled. The clients are categorized by method and gender.
Case Summary - Pregnancy	This shows a summary of pregnancies registered. The clients are TT received (TT1, TT2, TT Booster), ANC Clinic Visits (1-6), Delivered vs. Still Pregnant, Postnatal Clinic Visit Occurred and Postnatal Home Visit Occurred.
Case Summary - Referrals	This shows a summary of referrals in mSanté. Referral are categorized by type and their status (open, waiting for counter referral confirmation, cancelled)
Case Summary - HIV	This shows a summary of HIV patients in mSanté. Patients are categorized by Deaths, Missing Visits, Pregnant, TB Positive, Lost to Follow Up, ARV, Pre ARV, Cotrimox, INH, Anti TB and Vitamin B6.
HIV Home Visits	This shows the number of HIV home visits over a chosen time period. Home visits are categorized by lost to follow up visits, routine visits, sick patient visits, DOTS visits, new patient visits, visits with counseling, and PMTCT visits. Referrals for TB testing and drug side effects are also tracked. For unsuccessful visits,

	these are categorized by reason.

Annex 4: mSanté Draft Data Use Plan

mSanté- Mobile Health for Communities

Mobile Applications and Reports Developed for Agents de Santé Communautaires Polyvalents (ASCP), Health Facility Referrals and ASCP Supervisors in Haiti

mSanté Data Use Plan

DRAFT for MSPP Review and Input

Version: October 25, 2015

Innovated, Designed, Pilot Tested and Refined by the USAID Funded Services de Santé de Qualité pour Haïti - Central South (SSQH-CS) Project

Introduction

Under the leadership of the Ministère de la Santé Publique et de la Population (MSPP), Haiti is striving to strengthen community level health services to generate demand and deliver health services at the household level and connect these services to health facilities. In order to do so, MSPP has introduced a new cadre of community health agents, agents de santé communautaires polyvalents (ASCP). ASCPs are expected to provide integrated community level primary healthcare and referrals. ASCPs can benefit from tools that support them to conduct household visits and counseling, and documentation and reporting. The SSQH-CS project explored the innovative use of mobile applications to strengthen the quality of ASCP services and facilitate referrals and counter referrals.

Purpose and Audience for this Document

The purpose of this document is to provide guidance on the uses of the data that is generated by the mSanté suite of applications in Haiti for a variety of stakeholders for review and approval by MSPP. Once finalized by MSPP, this document can be used by stakeholders interested in the implementation of mSanté in Haiti.

mSanté Overview

In January 2014, SSQH-CS launched mSanté, a suite of mobile applications and reporting tools designed to strengthen quality of the national ASCP program. The goals of mSanté are:

1. Implement and scale an openly available suite of mobile applications and reports designed to strengthen the integration and quality of ASCP services through decision support and data collection functions for HIV, Maternal Health, Child Health and Family Planning
2. Improve the community and facility referral and counter referral systems and documentation on referrals
3. Strengthen supervisors ability to carry out mentoring to improve ASCP performance

mSanté Tools and Reports

- ASCP Integrated Service Delivery mobile job aid
- ASCP supervisors mobile job aid
- Facility Referral and counter referral job aid
- Program reports for key stakeholders to view ASCP performance data for decision making and quality improvement
- Community level data reports on the mobile app to feed into national HMIS data systems

All mobile applications were built using the CommCare platform, supported by Dimagi. Pathfinder and Partners in Health/Zanmi Lasante (PIH/ZL) contributed the technical content and design of the application and tools.

Overview of CommCare, mobile platform used in mSanté

Dimagi's open source, core platform, CommCare, is the most widely used, evidence-based platform for CHWs and has been evaluated by numerous top-tier research firms, NGOs, and academic institutions, including Pathfinder International (please see publication on Nigeria MNCH application implemented by Pathfinder Nigeria published in the Plos One Academic Journal here.[i]

CommCare enables mSanté team to easily create and deploy mobile apps for ASCPs. CommCare's cloud currently hosts over 240 active frontline programs in over 50 countries, including projects that are scaling to thousands of users. CommCare supports longitudinal case management of clients, including ASCPs that are low-literate users. CommCare can run offline in low-connectivity areas and ASCPs can send the data and forms to the server when they reach a network area for coverage. Using the content algorithms built on the MSSP training package by SSQH-CS team, Pathfinder PIH/ZL and Dimagi, ASCPs use the CommCare platform to register clients, and receive real-time job support through multimedia, decision support, and referral algorithms. All mSanté CommCare apps submit data in real-time to a secure cloud-based server where program staff can easily access reports on beneficiaries, CHW, or programmatic indicators. The SSQH-CS team is actively working with MSPP to determine the future hosting of the data for sustainability and potential scale if MSPP is interested.

Dimagi's innovative approach to designing and implementing CommCare is only possible due to key properties that differentiate CommCare from alternative mobile systems. CommCare is the only system that allows organizations to configure and deploy their own apps for frontline workers without custom programming or dedicated servers. Meaning, in order to update or change and application, it does not involve hiring dedicated developers and programmers. It is also the most evidence-based supported mHealth platform for low-resource settings, and has demonstrated impact on improving community health service quality and outcomes for maternal, newborn, and child health (MNCH). Over 30 studies demonstrate that CommCare amplifies CHWs' impact through improved service delivery and quality found here. [ii]

CommCare follows the widely successful trend of cloud computing (e.g., Sales force, Survey Monkey, Drop box) that enables organizations to run processes themselves without having to set up a server or hire programmers. Cloud products dramatically lower running costs and reduce reliance on consultants. To Dimagi's knowledge, CommCare is the only system that allows non-programmers to create their own mobile apps for frontline workers. Other mobile health products (e.g., DHIS2, Magpi, Data Winners) with online application building tools support only simple data collection, not longitudinal case management, and lack capabilities needed for frontline workers apps. Other apps for FLWs (e.g., D-tree, eMocha) require software developers to customize apps for each program.

ASCP mSanté Application Development Process

The original intention of the mSanté ASCP application was to support the ASCP during all functions of their work, as a job aid to help them follow MSPP protocols for quality care, referrals, home visits, and other community level activities. The ASCP application serves two main functions: 1) to support the ASCPs to register, track clients to reduce lost to follow up, provide community level services that are laid out in the ASCP curriculum, provide community level education and counseling to drive demand for services and 2) collect community and performance data on services rendered for quality improvement and improved supervision of this new community health workforce.

The mSanté ASCP application was developed to mimic the scope of work of the MSPP supported ASCP cadre. The SSQH-CS project used the *"Formation De L'Agent De Sante Communautaire Polyvalent"* training package that was developed in 2012 with the Ministerio Da Saude, Ministere De La Sante Publique et De La Population, Haiti and Ministere De La Sante De Cuba. The SSQH-CS team studied the roles and scope of work of the ASCPs, according to this training manual, to develop the mSanté ASCP application that has been piloted and refined for 15 months from 2014 to 2015. The outline of the full mSanté applications and system are found in the **Annex** to this document in English and French.

Additionally, the SSQH-CS team, Pathfinder and Dimagi, reviewed the national HMIS Indicators, ASCP home visit register, and rally post registers in order to ensure that all data elements reportable to the national HMIS system for community services were captured in the application. These are listed in the **Annex** to this document.

Pathfinder designed the algorithms and workflows, and worked together with Dimagi to design the family planning, maternal health and child health modules of mSanté in 2014. After the initial ASCP application was built, it was pilot tested with a subset of ASCPs in Fermanthe for 9 months. 9 months, based on international best practices and experience, is a very good timeline to ensure user testing, refinement and system development meets the needs of the project. Pathfinder, at the project inception and proposal stage through implementation, always envisioned the current mSanté innovations, now potentially ready to scale in Haiti if MSPP and USAID provide support, additional funding etc.

In order to develop, test and refine an effective user centered designed app that really meets the realities of ASCP work on the ground, SSQH-CS staff conducted countless field visits with ASCPs, meetings, trainings and rounds of user testing were essential to refine the application workflows. After nearly 15 months of design, inquiry, testing, refinement, user centered design at its finest, the application works very well and is accepted by users, refined to promote ease of ASCP use and collect essential community level HMIS indicators. A novel, innovative and important innovation in Haiti is the mSanté HIV module, with content designed with technical leadership of SSQH-CS partner PIH/ZL. This module was built and pilot tested in July and

August 2015 and further refinements are still being made to the HIV module. Additional content is being developed and built out now to cover all the responsibilities of ASCPs.

A current review is being conducted with MSPP to ensure the application aligns entirely with MSPP priorities, ASCP training package and SOW, including all community HMIS indicators with the MSPP standards and strategies as the priority for mSanté development.

mSanté Functions

The ASCP application allows them to register clients during household visits and provide HIV, family planning, maternal health and child health services. During an ASCP household visit, the mSanté application prompts capturing key health information about the client. If any danger sign or risk factor is identified during the client visit, the application triggers a client referral to the health facility. The ASCP application keeps a record of all clients and triggers prioritized reminders if the client is found to be high risk or in need of closer follow up. When a client is referred, the case record is transferred to the facility application where the nurse can see client history and update the case, confirming referral in mSanté. This confirmation of referral, with client follow up notes, is transferred via the application back to the ASCP, closing the referral loop. Supervisors also have an application that allows them to view the ASCP performance and conducting mentoring visits.

Key Functions of mSanté ASCP mobile application

Child Health	Pregnancy	Family Planning	HIV
Malnutrition	Registration	Enrollment	Holistic patient info
Vaccination Tracking	ANC Visits TT Vaccine	Referral for long acting methods	LTFU Tracking
Vitamin A	Folic Acid/Vit A	FP refills	Adherence
Deworming	HIV/STI screening	HIV/STI screening	HIV/STI Screening
Diarrhea	Birth Planning		TB Screening
TB	Birth Details for mom and baby	Focus on youth counseling	PMTCT including EID
Other symptoms and referral	Risk Factor identification and		Other Illnesses identification and

	referral		referral
Counseling	Counseling	Counseling	Counseling

mSanté Data Overview

Community Data for Quality Improvement

Data collected through mSanté provides information on the health of clients and information on services delivered through ASCPs, including referrals for higher level care. mSanté also provides data on the performance of ASCPs using the application and providing services. Ensuring mSanté data reaches health facility and is used can support integrated quality improvement.

- ASCP mSanté application is intended to capture all HMIS community level indicators (we are in the process of ensuring all indicators are captured over this next quarter and review with MSPP) and presents monthly summaries on the mobile device
- ASCP supervisor mSanté application automatically aggregate all of the ASCPs monthly reportable data on their mobile device, allowing them to easily report to the facility data clerk for verification and submission to the DDS as per the national process

Community Data for Integration into the National SISNU HMIS

As mentioned above, the mSanté applications and system were built using the national HMIS reporting forms to ensure that all data reportable for the ASCP was captured in the application. It is important to note that the main purpose of the application is to allow ASCPs to register and track clients *over time* so that they can provide quality services based on algorithms matching the community care protocols of MSPP. This is what differentiates using CommCare as a mobile platform over another mobile data collection tool: longitudinal case management and tracking. Most other mobile data collection tools including Magpi, DHIS2 mobile provide one time snapshot reporting capabilities, but are not suited for client management at the community level.

In the backend of CommCare, CommCareHQ, the data on clients registered in mSanté is then aggregated and sorted to which would be a national level reportable indicator. Currently, the MSPP is leading the roll out of DHIS2 as an electronic reporting tool that feeds into SISNU, the national HMIS system.

mSanté Data Storage for mSanté

Currently, all data collected through mSanté is stored on cloud servers hosted by Dimagi. The Dimagi servers are HIPAA compliant, meaning the client level data stored adhere to US medical information and patient privacy laws. SSQH-CS is very interested in ensuring that the data

storage and transmission protocols meets MSPP standards and thus continued conversations are ongoing about this. Several options have been prepared and are ready to discuss with MSPP.

Accessing mSanté Data

Based on the mSanté algorithms and modules, visit data collected in the CommCare mobile applications, administrators can view pre-configured reports on CommCareHQ. These reports display information about checklist submissions, as well as productivity and performance. This enables real-time tracking of form submissions. For example, CommCareHQ includes a Worker Activity Report that lists the performance of each user in terms of their number of cases, follow up rates, and other key metrics. (The list of the full reports that have been configured for mSanté are found in the **Annex**.)

Additionally, the raw data collected in the mobile application can be downloaded in an Excel or .CSV file for analysis by the program team or to seed statistical programs like SPSS. Images captured can also be viewed online for each form submitted. Current reports support use cases around user profiles, data export, data forwarding and longitudinal tracking. CommCareHQ also supports custom raw data exports, should one desire to download only a specific sub-set of indicators exported to Excel for analysis or a sub-set of data based on a specified date range. Additionally, administrators can schedule certain reports to go out at a regular interval and be emailed to a wider group. These emails include the report summary in the body of the email, in addition to an Excel attachment with the data.

Roles & Permissions for Accessing mSanté data

CommCare provides numerous role-based access and security features for users. CommCare HQ also contains a user permissions model that allows people with varying roles the ability to perform different tasks and view different types of data in their domain. Domain administrators can revoke and edit permissions of other users in the domain at any time.

The only users that have access to a CommCare project space and data are authorized users (to be decided by MSPP) and Dimagi technical administrators. User management is available to your mSanté CommCare web administrators, so that adding and removing users is completely in MSPP control. If a user is no longer authorized in your system, simply remove them and they will no longer have access to content stored in CommCare.

With CommCare, each CommCare user can have different levels of access to a project space. For example, one person can be given access to view only reports on worker performance, while another person may have access to all data collected or only data from one health facility or group of ASCPs. As a project administrator, it is also possible to customize different levels of access.

ASCPs, Supervisor and facilities trained to use mSanté will only have access to the data that they have collected. Depending upon the configuration of an application they may have access

to that data for an extended period on their phone, or the data may cease to be available as soon as it is submitted.

The SSQH-CS team Pathfinder has developed a data privacy and use agreement that requires all stakeholders who access the data either in CommCareHQ or over email that covers client confidentiality requirements. This can be found in the **Annex** and customized to the MSPP protocols.

There are series of permissions in CommCare that allow or restrict access to all features of the system from application building to data viewing. All features are highly configurable for any stakeholder. For example, although 120 facilities and 6 departments might be submitting data through mSanté, MSPP can grant access for only one NGO to see or get access to only their data for their site, and not see other information. The purpose of this document is to outline what stakeholders could benefit from viewing the data in mSanté, at what frequency and what level of aggregation and how this data can be accessed.

mSanté Mobile Reports

In order to respect the current data flow, including facility level aggregation, verification and approval by the health facility to submit to DDS for entry into DHIS, Pathfinder and Dimagi worked to build reports on data and performance for the ASCPs and the Supervisors to easily view their monthly aggregate data for submission by the community health nurse to the facility data clerk to fill the facility reporting form.

Monthly, ASCPs will see an aggregate summary on their application that will tell them their performance for the month (list of indicators can be found in the annex). For any given facility, there could be anywhere from 10 to over 100 ASCPs that report for that facilities community services. The Community Nurse, through the mSanté Supervisor Application has the same reporting portal where they can see the aggregate summary of all ASCP performance indicators. This way, the community nurse, monthly, does not have to aggregate individual ASCP reports, tallying indicators and submitting this to the data clerk. Now with one click, the community nurse can simply transfer the information from the phone to the facility reporting form. A screen shot of the sample mobile report can be seen in Figure 1 below.

mSanté Web Reports

CommCareHQ is the backend reporting and application building web manager. In CommCare HQ, all data is aggregated and reports can be accessed, filtered, mapped using GIS data points and downloaded. These functionalities were described above. The full list of the reports that are currently available can be found in the **Annex**.

Report and Data Definitions

There are two main types of reports and data that are presented in this document:

1) mSanté Usage and Performance Data

2) Community Level Services or Program Data

These three main types of data are explained below in addition to some suggestions for how data collected through mSanté can be used.

Definitions:

- Forms: forms refer to an interaction in the application. A list of all forms in mSanté ASCP and Supervisor apps can be found in the mSanté Application Overview that is found in the **Annex**.
- Modules: modules refer to groups of forms that relate to a particular service delivery. For example, FP is a module, and there are registration forms, follow up forms and referral forms in mSanté

GPS

In mSanté, for every form that is submitted, if the ASCP is in network range and the device can pick a GPS signal, then a GPS location is tagged to the form alongside a timestamp. These features have several purposes, to prevent falsification of data, to understand when ASCPs are doing house visits or submitting data in one batch because of network connectivity.

However the data, particularly for GPS can be very valuable to create maps of prevalence of certain conditions in the community, or can be used for community level disease surveillance in the future.

mSanté ASCP, Supervisor or Facility Performance Data

mSanté Performance Data refers to data that the system collects on how ASCPs, supervisors and facilities use the mSanté mobile applications. This information is best used to monitor how a workforce is adopting and using the mobile applications and can allow managers to detect high performers or low performers (in terms of house visits, rally posts conducted, referrals completed, supervision visits held, etc.)

The reports are a set of tallies of various activities that mobile workers performed in mSanté over a given period. This includes (but not limited to the below) and can refer to any time period desirable (weekly, monthly, quarterly etc):

- The number of forms filled out for ASCP, Supervisor or Facility
- The number of client updated through follow up visits or referrals of each type of service delivered and recorded in mSanté
- Quantities of other specific activities carried out by and ASCP, Supervisor or Facility.
  - How many ASCPs are actively using and reporting data through mSanté?

- How many supervisors are actively using mSanté?
- How many patients did the ASCP see at Rally Posts this month?
- How many ASCPs are seeing more than 10 households per month?
- How many referrals did the ASCP make, and then how many did they complete?
- How many supervision visits did an ASCP supervisor make?
- How many referrals did a certain facility complete and send information back to the ASCP?

All of this is data about the performance of the CHW and their usage of the system. Usage data gives a basis on which to hold any given user/role accountable for what they have done or not done in a given period, relative to what was expected given the responsibilities of the role.

mSanté Community Service Delivery Data

mSanté Community Service Delivery Data is information collected from and about patients in the community that are seen and offered services by ASCPs, according to the MSPP standards about what community level services and counseling ASCPs can offer. It can be thought of in terms of the service delivery areas ASCPs support at the community level and are captured in mSanté, which is currently: Family Planning, Pregnancy, Child Health, and HIV.

Each programmatic area contains a number of indicators that are collected as part of direct service provision, or as part of broader surveillance on the part of regulatory and implementing bodies, or, as is most often the case, both. For instance,

- Questions asked by CHWs about ANC visits for pregnant women both serve to remind the CHW to talk about ANC visits, remind the patient to seek out ANC visits, and also provide the broader health system with information about how many ANC visits are being completed in the population.
- Number of women that were pregnant and identified as high risk by the application, based on evidence based maternal risk factors for complications.
- The number of children that have received vaccinations by ASCPs that are missing their full vaccination course
- Or the number of children that were assessed for malnutrition and classified in need of therapeutic feeding, etc

This data is very important for quality improvement of community level services and improved integration of this data into the health facility quality improvement programs, including HealthQual and RBF in Haiti. Program managers, clinicians, facilities and other program stakeholders can view information about clinical and counseling services offered by ASCPs that are offered, referrals generated and confirmed, etc.

Program managers, clinicians and other stakeholders can see any picture of the communities' health, risk factors, disease surveillance etc. Having this information can be powerful tool to redirect program resources towards addressing issues that start to appear more frequently so that clinical and preventive services can be targeted. The information is also valuable for lost to follow up tracking, where you can tell (and the application prompts the ASCP) if clients are not coming in for services, are in need of vaccination or are not adherent to ARVs for example.

If stakeholders would like to see other reports, a system can be put in place to allow MSPP to review and approve new reports and access as mentioned above.

mSanté Data for the National HealthQual Quality Improvement Program

As mentioned, mSanté collects a myriad of community level data that can be useful for facilities to understand what services their ASCPs are offering, counseling and demand generation activities that have been completed.

It is important to note that the mSanté protocols for ASCP community counseling and service delivery prompt ASCPs to accurately identify risk factors, create demand for services such as contraception and thus will inevitably increase the client load at any health facility by their work generating demand for these services by clients. This information can be shared with facilities so that they can adequately plan and forecast for incoming clients, forecast supplies, staffing and stock levels etc. Additionally, tracking the commodities delivered at the last mile by ASCPs can help streamline the procurement and supply chain for ensuring those ASCPs have the commodities they need to deliver these services to an increasing influx of patients in need of services.

In Haiti, the MSPP has adopted the national health quality improvement scheme, HealthQual. HealthQual is a quality improvement scheme that works with health facilities to identify gaps in quality and develop action plans to address those gaps through a collaborative facility and staff driven process. SSQH-CS is actively supporting the HealthQual initiative and has an interest in discovering ways that community service delivery data can support HealthQual initiatives. Currently HealthQual activities only cover facility level services and do not robustly use community level services, demand generated or disease surveillance in their activities. Now, having mSanté available, facility HealthQual committees have the opportunity to use this information to also include community service delivery as one aspect of services that a health facility supervises.

mSanté supporting the Results Based Financing Scheme in Haiti

Another potential use of the community service delivery data is to inform the RBF scheme roll out in Haiti. As facilities are soon to be tied to targets for service delivery, they need to rely on the ASCPs as a key partner in generating demand for services at the facility level.

Additionally, facilities also have targets for community level services offered, and mSanté allows easy data viewing and reporting against RBF targets. The SSQH-CS mSanté team will work with the SSQH-CS RBF leads to determine what support and community level data could be provided to feed into national RBF indicators, if applicable.

mSanté supporting community level data submission for SISNU

Another use of this data is for national level HMIS reporting. Indicators such as the number of vaccinations given at the community level are reportable monthly. Or number of new family planning adopters or refills given during rally posts or home visits are aggregated monthly, by

HMIS indicator and are available as reports on CommCareHQ as well as now in beta testing, and a very new feature of CommCare, available as aggregate reports within the application itself. As mentioned above with screen shots. This feature allows the potential removal of paper based recording and reporting, a common burden of ASCPs using mSanté, that they have to fill the paper logs and registers alongside using mSanté, which can be a common complaint of extra burden.

Community Use of mSanté Data

mSanté currently collects direct community service delivery data, but does not currently include (but a feature that could be added) is the collection of client feedback on the quality of services that are delivered at facilities. Client experiences during clinical interactions (for example, provider behavior, clinic access, clinic hours, availability of key commodities needed for quality client care, etc) are all very important predict client interest in attending facility level services.

Pathfinder International in Tanzania, Mozambique and Nigeria all actively employ mobile technology to solicit client feedback on facility clinical services (but could also potentially be community level) service quality to promote advocacy efforts. Through Pathfinders mHealth app employing our citizen report card methodology implemented in Tanzania and Mozambique, community health workers are prompted, when a client receives a service to interview the client about their experience. This data is then shared with community level boards and committees, health facilities, regional and department health bureaus and other key decision makers and stakeholders to inform constructive conversations about the quality of services available, first highlighting successes, saved lives, progress and then challenges and improvements needed.

Currently mSanté does not have this feature (although could be applied to mSanté with additional funding) the data currently collected through mSanté can still be fed back to the community to empower citizens to advocate for their health rights and services, including service quality that they deserve. Though existing community mechanisms, SSQH-CS can explore incorporating discussions about community service data to ensure client feedback is heard and reported back to community members, in order to improve community engagement. Information is power, community groups that support the rights of their citizens can utilize this information to make powerful change in their communities, reduce morbidities and mortalities and save their mothers, sisters, brothers, fathers and neighbors lives if the data is presented and used appropriately.

mSanté and iSante: Integrated Community to Facility Medical Records

mSanté currently operates at the community level, triggering client registration and follow up and referrals to the health facility. However, integration of CommCare and iSante could allow for streamlined client tracking from facility to community and vice versa, and support more dedicated lost to follow up and adherence support for all areas of HIV, FP, Maternal Health and Child Health. Discussions are ongoing about the potential for this and additional funding that would be required to integrate both systems. This feature and potential for integration needs to be technically reviewed for feasibility, reviewed and input gathered from MSPP and a deep dive into understanding budget implications as SSQH-CS does not have funding for a large scale

integration. Again, SSQH-CS does not have funding for technical integration for year 3 but is happy to have technical discussions surrounding what it would take to integrate.

mSanté Program Report and Data Stakeholders

This section describes all of the potential stakeholders who could benefit from viewing mSanté data either for HMIS reporting, program management or quality improvement of community level services. For each stakeholder, a detailed description of how they could access the data is found in the **Annex**. This is for review and discussion with MSPP in order to finalize.

Stakeholder's Role in mSanté Data Viewing and Access to mSanté Data

Stakeholder	Role in mSanté	Data Permissions	How to Access
MSPP	Leadership and Governance	All mSanté data	Owns all data, accessed through CommCareHQ, emailed reports
DDS	Leadership and Governance at DDS level	All mSanté Data for DDS,	Though CommCare HQ, emailed reports, inclusion in paper HMIS facility reports monthly
Zone Ciblees and local NGOs	Management	Program data and mSanté usage by ASCPs for respective reporting health facilities	Emailed Reports
Health Facilities (Hospital, Dispensary)	Functions as both mSanté Implementer, Manager and mSanté User:	Access the application itself: Medical Director, Community Health Department and Lead, ASCP Supervisors, Clinicians to confirm referrals HealthQual committees, All program and client data to supervise	Emailed Reports, Reports available on mobile devices in mSanté application

		ASCPs, confirm referrals and use data for CQI	
Clients and Community members including: community groups, community health boards, leaders/elders, traditional birth attendants, etc through existing informal or informal methods	Consumer of mSanté progress, users and community data generated	Develop low literate ways to share data through existing SSQH-CS supported community mechanisms	In-person communication through existing community mechanisms
CDS	Lead ASCP Trainer Supervisor and community implementer for SSQH-CS	All data related to ASCP performance, supervision, quality, services delivered, referrals and counter referrals, connections and community reporting to facility and DDS oversight leadership	Select CommCareHQ access, emailed reports
SSQH-CS Consortium Partners	Team implementing SSQH	Reports on specific areas partners work on and facilities to support quality improvement	Emailed Reports
USAID	Funding and Oversight Agency	Program data on training, usage of mSanté `	Email reports and presentations

Pathfinder International	mSanté innovation, inception, Implementer and strategic technical advisor for mSanté	All data for administration; current designer, tester, trainer, implementer, troubleshooter, re-design, modeling and strategic global advice provider	Access to CommCareHQ
Dimagi	CommCare Platform and overall administrator	All data for administration; current designer, tester, trainer, implementer, troubleshooter, re-design, modeling and strategic global advice provider	Hosts CommCareHQ
ZL/PIH	mSanté HIV Content Designer	All HIV (and other service delivery data) data to support targeted ASCP follow up for reducing LTFU and supporting facility to community continuum of care actualized)	Emailed Reports, select access to CommCareHQ for HIV specific reports
ASCPs	Implementers of mSanté	Client records for each ASCP, monthly HMIS reports	Reports in mSanté application

mSanté Data Permissions and Potential Data Use by Stakeholder

This section describes the reports and potential uses of the data for each of the mSanté stakeholders listed above.

Table 3: mSanté Data Reports and Mode of Delivery Detail overview

Stakeholder	Reports	Verification	Mode and Frequency of Delivery
ASCPs	HMIS Report on Indicators individually collected	Review of paper logs and mSanté mobile report (in advance of removing paper based ASCP logs)	Monthly via mSanté mobile ASCP application
ASCP Supervisors and Community Health Managers at Facilities	ASCP Performance data using mSanté : number of ASCPs currently using mSanté	Follow up in person with ASCPs	Monthly, on mSanté supervisor application, emailed reports
	Number of each client seen by type of ASCP health service, new clients enrolled, follow up visits conducted, open and close referrals	Review of ASCP logs to ensure accuracy monthly	Monthly, on mSanté Supervisor Application, emailed reports
	HMIS Report for Community level services	Review of ASCP logs to ensure accuracy before submitting HMIS reports	Monthly on mSanté supervisor application
Health Facility Referral mSanté users	Open and Closed Referrals by health area and ASCP	Confirmation of client attendance at services through logs	Available on mSanté Referral application immediately
	Program data on number of clients referred by health area by month	Confirmation through community department, ASCP supervisors	Monthly to review clients in total referred (what are open and closed) and how many clients seen for

			services in community to use for planning to ensure service quality and see service uptake at the facility due to ASCPs
Health Facility Heads, Supervising Zone ciblee offices and NGO leadership	ASCP Performance data using mSanté : number of ASCPs currently using mSanté by relevant facility	ASCP supervisor verification against logs	Monthly, emailed
	Open and Closed Referrals by health area and ASCP	Confirmation of client attendance at services through logs	Available on mSanté Referral application immediately
	Program data on number of clients referred by health area by month	Confirmation through community department, ASCP supervisors	Monthly to review clients in total referred (what are open and closed) and how many clients seen for services in community to use for planning to ensure service quality and see service uptake at the facility due to ASCPs NOTE: Some clients might go to another facility for services, when mSanté records this as another facility referral. This is why the ASCP can close a referral. Will brainstorm on how to ensure more accurate reporting.

	HMIS Report for Community level services	Review of ASCP logs to ensure accuracy before submitting HMIS reports	Monthly Emailed Reports
DDS	HMIS Report for Community level services (only in their DDS)	Facility verification of data through CHW supervisors	Monthly Emailed Reports
MSPP	HMIS Report for all facilities through SISNU	DDS verification system in place for SISNU	Any time access to CommCareHQ and emailed reports, SISNU data access (if integrated)
Community Members	General statistics about services offered at community level	Facility verification	Monthly through existing community groups, CDS and mechanisms that SSQH supports
SSQH-CS Pathfinder, Dimagi	All data from ASCP usage to performance statistics for USAID reporting	As mentioned above	Complete administrative access to CommCare mSanté domain
CDS	All data from ASCP usage to performance statistics for USAID reporting	As mentioned above	Select access to CommCareHQ and emailed reports by facility on usage and service statistics monthly
PIH	ASCP HIV service usage	Mentioned above	CommCareHQ and emailed reports by facility on usage specific to HIV and service statistics

			monthly

Process for asking for access to mSanté to view data or get reports

Together with MSPP, SSQH-CS would like to review how organizations and stakeholders could request access to mSanté data in the future. This section will be refined with feedback from MSPP on current national protocols for accessing data.

Citations

[i] McNabb M, Chukwu E, Ojo O, Shekhar N, Gill CJ, Salami H, et al. (2015) Assessment of the Quality of Antenatal Care Services Provided by Health Workers Using a Mobile Phone Decision Support Application in Northern Nigeria: A Pre/Post-Intervention Study. PLoS ONE 10(5): e0123940. doi:10.1371/journal.pone.0123940

[ii] Dimagi CommCare Evidence Base: http://tinyurl.com/dimagievidencebase

List of Customized Reports Available in mSanté CommCareHQ Domain

Below is a list of custom reports that are built and in process of building to date for mSanté. Any report below can be viewed by Facility, NGO or Zone Ciblee, and for any time period:

1. Any worker activity report (time submitted forms, number of forms, active users all customizable by facility, NGO, Zone Ciblee, DDS or other, for any time period desired

ASCP community activity reports (for management and quality of ASCP services)

Each of these reports can be grouped by ASCP, Facility or NGO/ZC and show community level HMIS indicators. They can be filtered by a date range (typically the last month).

1. Client Visits (Community)

- New infants registered <1 year
- Infants < 1 year followed with follow up
- New children registered 1-5 years
- Children 1-5 years followed with follow up
- New pregnant women enrolled
- Pregnant women follow up visits
- Total HIV clients Enrolled
- Total HIV clients Follow up

2. Pregnancy Care (Community)

- High Risk Pregnancies (as identified by the ASCP)
- Pregnancies receiving iron folate (if provided by the ASCP)
- Pregnancies with a birth plan (if discussed with ASCP during third trimester)
- Maternal Deaths

3. Deliveries (Community)

- TBA (< 15 years, 15-19 years, 20-24 years, 25-29 years, 30 years +, Unknown)
- Home/Other (< 15 years, 15-19 years, 20-24 years, 25-29 years, 30 years +, Unknown)
- Number of still births
- Referral for Complications

- Complications Leading to Death

4. Births (Community)

- TBA (<1.5 kg, 1.5-2.5kg, 2.5kg+, no weight, BF immediately)
- Home (<1.5 kg, 1.5-2.5kg, 2.5kg+, no weight, BF immediately)

5. PNC Visits (Community)

- Home Visit – 0-3 days
- Home Visit – 6 days +

6. FP Enrollments (Community)

- PC (<25 years, 25 years +)
- PP (<25 years, 25 years +)
- Depo (<25 years, 25 years +)
- Collier (<25 years, 25 years +)
- MAMA (<25 years, 25 years +)
- Women Using Condom (<25 years, 25 years +)
- Total Women
- Males Using Condoms (<25 years, 25 years +)

7. FP Users

- PC (<25 years, 25 years +)
- PP (<25 years, 25 years +)
- Depo (<25 years, 25 years +)
- Implant (<25 years, 25 years +)
- IUD (<25 years, 25 years +)
- Collier (<25 years, 25 years +)
- MAMA (<25 years, 25 years +)
- Women Using Condom (<25 years, 25 years +)
- Tubal Ligation (<25 years, 25 years +)

- Male Using Condom (<25 years, 25 years +)
- Vasectomy (<25 years, 25 years +)

8. FP Refills

- PC
- PP
- Depo

9. Child Community Visits

- Total Visits (M/F, < 6 months, 6-23 months, and 24-59 months)
- First Visits (M/F, < 6 months, 6-23 months, 24-59 months)
- Children Weighted (M/F, < 6 months, 6-23 months, and 24-59 months)
- Underweight (M/F, < 6 months, 6-23 months, 24-59 months)
- Overweight (M/F, < 6 months, 6-23 months, and 24-59 months)
- Children tested with MUAC (M/F, < 6 months, 6-23 months, and 24-59 months)
- MAM Children (M/F, < 6 months, 6-23 months, 24-59 months)
- SAM Children (M/F, < 6 months, 6-23 months, 24-59 months)
- Deworming/Albendazole Distributed (M/F, 6-23 months, 24-59 months)

10. Child Vaccination Data

- Vitamin A (Dose 1, 2, 3, 6-23 months, 24-59 months)
- BCG
- Polio At Birth, 1, 2, 3
- Penta 1, 2, 3
- Rota 1, 2
- Vaccine Schedule Complete 0-1 year
- Vaccine Schedule Complete > 1 year

11. Counseling Topics

- Child Vaccination

- Child Nutrition
- Child Danger signs
- Child New Born Care
- Reproductive health (RH) ANC visit importance
- Reproductive health (RH) Postnatal clinic visit importance
- RH Danger Signs
- RH Clinic service delivery
- Family Planning
- Importance of Tetanus vaccine
- Hygiene importance
- HIV/STI
- Diarrhea
- Cholera

Other Programmatic Data

These reports show programmatic data collected by the program (that is not linked to any specific HMIS indicators). This can be useful for facilities to manage their program.

1. Children due for vaccination report (by actual child's name and assigned ASCP) – highlights the dates that the vaccinations were registered and what is missing on the schedule

- Client Name
- NGO or MSPP Name
- Facility
- ASCP Name
- Child Address
- Date Last Visit
- Next vaccination date
- BGC, OPV 0-3, OPV Booster, Penta 1-3, Measles and Polio

2. Children identified as malnourished (by actual child's name and assigned ASCP) –

· Client Name

· NGO or MSPP Name

· Facility

· ASCP Name

· Child Address

· Date Last Visit

· Sex

· Nutrition Status (Weight and MUAC)

3. Case count – total children being seen <5 years (by org and facility)

· Organization/Facility

· Counts of child cases by male/female/not entered

· Number of children with complete vaccination (yes and no)

4. Case count – Family Planning Clients (by org and facility)

· Organization/Facility

· Total FP cases

· FP cases enrolled in a method

· Males, females

· Number of users by methods captured

5. Case count pregnant women

· Organization, facility

· Pregnancy cases

· Delivered (Yes or no)

· Post natal care visit

· Identified as high risk

- TT1, 2 and Booster
- ANC 1-4+

6. Case Count Referrals

- Organization
- Facility
- Referral open or not
- Referral count
- Referral type (replaces implant, STI, TB, HIV, Child Postnatal, Women pre and post natal)

Annex 5: mSantéTraining Materials

- All training materials including PowerPoint slides can be found in a zip folder these include:
- Training materials
- Training slides
- Site orientation materials
- Demo instructions
- User configuration instructions

Annex 6: Tablet Breakage report

September 2015

mHealth

Tablettes defectueuses

Institution	Nbre d'ASCPs	Tablettes defectueuses	%Tablettes deffectueuses
Fondefh	62	34	54%
Aurore du Bel'air	18	5	27%
OBCG	29	4	13%
CDS	7	1	14%
Fosref	28	11	39%
OBDC	29	6	20%
MEBSH sud/ La fanmi	24	2	8%
St Martin	35	10	28%
Grace Children	23	6	28%
Fermathe	24	1	26%
Total	279	80	28%

N.B 75% des tablettes defectueuses ont un problème de port, 20% problèmes d'écrans, les autres cas mineurs sont: carte Sim perdu, problème touch, bouton volume etc. à noter aussi dans le réseau de Fondefh il y a 6 tablettes qui sont en pannes plus qu'une seule fois.

Prepare par: Fritz Gerald Jean Baptiste, Health Officer

Annex 7: USAID Endorsed Principles for Digital Development

The Principles can be found if you click this hyperlink: USAID Endorsed Principles for Digital Development